

BP-20 Rate Proceeding

Final Proposal

# Power Loads and Resources Study Documentation

BP-20-FS-BPA-03A

July 2019





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## COMMONLY USED ACRONYMS AND SHORT FORMS

|            |   |
|------------|---|
| AAC        | Anticipated Accumulation of Cash                              |
| ACNR       | Accumulated Calibrated Net Revenue                            |
| ACS        | Ancillary and Control Area Services                           |
| AF         | Advance Funding   |
| AFUDC      | Allowance for Funds Used During Construction                  |
| aMW        | average megawatt(s)   |
| ANR        | Accumulated Net Revenues                                      |
| ASC        | Average System Cost   |
| BAA        | Balancing Authority Area                                      |
| BiOp       | Biological Opinion  |
| BPA        | Bonneville Power Administration                               |
| Bps        | basis points  |
| Btu        | British thermal unit  |
| CIP        | Capital Improvement Plan                                      |
| CIR        | Capital Investment Review                                     |
| CDQ        | Contract Demand Quantity                                      |
| CGS        | Columbia Generating Station                                   |
| CHWM       | Contract High Water Mark                                      |
| CNR        | Calibrated Net Revenue  |
| COB        | California-Oregon border                                      |
| COE        | U.S. Army Corps of Engineers                                  |
| COI        | California-Oregon Intertie                                    |
| Commission | Federal Energy Regulatory Commission                          |
| Corps      | U.S. Army Corps of Engineers                                  |
| COSA       | Cost of Service Analysis                                      |
| COU        | consumer-owned utility  |
| Council    | Northwest Power and Conservation Council                      |
| CP         | Coincidental Peak   |
| CRAC       | Cost Recovery Adjustment Clause                               |
| CSP        | Customer System Peak  |
| CT         | combustion turbine  |
| CWIP       | Construction Work in Progress                                 |
| CY         | calendar year (January through December)                      |
| DD         | Dividend Distribution   |
| DDC        | Dividend Distribution Clause                                  |
| <i>dec</i> | decrease, decrement, or decremental                           |
| DERBS      | Dispatchable Energy Resource Balancing Service                |
| DFS        | Diurnal Flattening Service                                    |
| DNR        | Designated Network Resource                                   |
| DOE        | Department of Energy  |
| DOI        | Department of Interior  |
| DSI        | direct-service industrial customer or direct-service industry |
| DSO        | Dispatcher Standing Order                                     |
| EE         | Energy Efficiency   |

|            |  |
|------------|--|
| EIM        | Energy imbalance market                                    |
| EIS        | Environmental Impact Statement                             |
| EN         | Energy Northwest, Inc.                                     |
| ESA        | Endangered Species Act                                     |
| ESS        | Energy Shaping Service                                     |
| e-Tag      | electronic interchange transaction information             |
| FBS        | Federal base system  |
| FCRPS      | Federal Columbia River Power System                        |
| FCRTS      | Federal Columbia River Transmission System                 |
| FELCC      | firm energy load carrying capability                       |
| FERC       | Federal Energy Regulatory Commission                       |
| FOIA       | Freedom Of Information Act                                 |
| FORS       | Forced Outage Reserve Service                              |
| FPS        | Firm Power and Surplus Products and Services               |
| FPT        | Formula Power Transmission                                 |
| FRP        | Financial Reserves Policy                                  |
| F&W        | Fish & Wildlife  |
| FY         | fiscal year (October through September)                    |
| G&A        | general and administrative (costs)                         |
| GARD       | Generation and Reserves Dispatch (computer model)          |
| GMS        | Grandfathered Generation Management Service                |
| GSP        | Generation System Peak                                     |
| GSR        | Generation Supplied Reactive                               |
| GRSPs      | General Rate Schedule Provisions                           |
| GTA        | General Transfer Agreement                                 |
| GWh        | gigawatthour   |
| HLH        | Heavy Load Hour(s)   |
| HOSS       | Hourly Operating and Scheduling Simulator (computer model) |
| HYDSIM     | Hydrosystem Simulator (computer model)                     |
| IE         | Eastern Intertie   |
| IM         | Montana Intertie   |
| <i>inc</i> | increase, increment, or incremental                        |
| IOU        | investor-owned utility                                     |
| IP         | Industrial Firm Power                                      |
| IPR        | Integrated Program Review                                  |
| IR         | Integration of Resources                                   |
| IRD        | Irrigation Rate Discount                                   |
| IRM        | Irrigation Rate Mitigation                                 |
| IRPL       | Incremental Rate Pressure Limiter                          |
| IS         | Southern Intertie  |
| kcfs       | thousand cubic feet per second                             |
| kW         | kilowatt   |
| kWh        | kilowatthour   |
| LDD        | Low Density Discount                                       |
| LGIA       | Large Generator Interconnection Agreement                  |
| LLH        | Light Load Hour(s)   |

|                     |  |
|---------------------|--|
| LPP                 | Large Project Program  |
| LTF                 | Long-term Firm   |
| Maf                 | million acre-feet  |
| Mid-C               | Mid-Columbia   |
| MMBtu               | million British thermal units  |
| MNR                 | Modified Net Revenue   |
| MRNR                | Minimum Required Net Revenue   |
| MW                  | megawatt   |
| MWh                 | megawatthour   |
| NCP                 | Non-Coincidental Peak  |
| NEPA                | National Environmental Policy Act  |
| NERC                | North American Electric Reliability Corporation  |
| NFB                 | National Marine Fisheries Service (NMFS) Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp) |
| NLSL                | New Large Single Load  |
| NMFS                | National Marine Fisheries Service  |
| NOAA Fisheries      | National Oceanographic and Atmospheric Administration Fisheries  |
| NOB                 | Nevada-Oregon border   |
| NORM                | Non-Operating Risk Model (computer model)  |
| Northwest Power Act | Pacific Northwest Electric Power Planning and Conservation Act   |
| NP-15               | North of Path 15   |
| NPCC                | Pacific Northwest Electric Power and Conservation Planning Council   |
| NPV                 | net present value  |
| NR                  | New Resource Firm Power  |
| NRFS                | NR Resource Flattening Service   |
| NRU                 | Northwest Requirements Utilities   |
| NT                  | Network Integration  |
| NTSA                | Non-Treaty Storage Agreement   |
| NUG                 | non-utility generation   |
| NWPP                | Northwest Power Pool   |
| OATT                | Open Access Transmission Tariff  |
| O&M                 | operation and maintenance  |
| OATI                | Open Access Technology International, Inc.   |
| OS                  | Oversupply   |
| OY                  | operating year (August through July)   |
| PDCI                | Pacific DC Intertie  |
| PF                  | Priority Firm Power  |
| PFp                 | Priority Firm Public   |
| PFx                 | Priority Firm Exchange   |
| PNCA                | Pacific Northwest Coordination Agreement   |
| PNRR                | Planned Net Revenues for Risk  |
| PNW                 | Pacific Northwest  |
| POD                 | Point of Delivery  |
| POI                 | Point of Integration or Point of Interconnection   |
| POR                 | Point of Receipt   |

|                         |  |
|-------------------------|--|
| PS                      | Power Services                                   |
| PSC                     | power sales contract                             |
| PSW                     | Pacific Southwest                                |
| PTP                     | Point to Point                                   |
| PUD                     | public or people's utility district              |
| PW                      | WECC and Peak Service                            |
| RAM                     | Rate Analysis Model (computer model)             |
| RCD                     | Regional Cooperation Debt                        |
| RD                      | Regional Dialogue                                |
| RDC                     | Reserves Distribution Clause                     |
| REC                     | Renewable Energy Certificate                     |
| Reclamation             | U.S. Bureau of Reclamation                       |
| REP                     | Residential Exchange Program                     |
| REPSIA                  | REP Settlement Implementation Agreement          |
| RevSim                  | Revenue Simulation Model                         |
| RFA                     | Revenue Forecast Application (database)          |
| RHWM                    | Rate Period High Water Mark                      |
| ROD                     | Record of Decision                               |
| RPSA                    | Residential Purchase and Sale Agreement          |
| RR                      | Resource Replacement                             |
| RRS                     | Resource Remarketing Service                     |
| RSC                     | Resource Shaping Charge                          |
| RSS                     | Resource Support Services                        |
| RT1SC                   | RHWM Tier 1 System Capability                    |
| SCD                     | Scheduling, System Control, and Dispatch Service |
| SCS                     | Secondary Crediting Service                      |
| SDD                     | Short Distance Discount                          |
| SILS                    | Southeast Idaho Load Service                     |
| Slice                   | Slice of the System (product)                    |
| T1SFCO                  | Tier 1 System Firm Critical Output               |
| TCMS                    | Transmission Curtailment Management Service      |
| TGT                     | Townsend-Garrison Transmission                   |
| TOCA                    | Tier 1 Cost Allocator                            |
| TPP                     | Treasury Payment Probability                     |
| TRAM                    | Transmission Risk Analysis Model                 |
| Transmission System Act | Federal Columbia River Transmission System Act   |
| Treaty                  | Columbia River Treaty                            |
| TRL                     | Total Retail Load                                |
| TRM                     | Tiered Rate Methodology                          |
| TS                      | Transmission Services                            |
| TSS                     | Transmission Scheduling Service                  |
| UAI                     | Unauthorized Increase                            |
| UFT                     | Use of Facilities Transmission                   |
| UIC                     | Unauthorized Increase Charge                     |
| ULS                     | Unanticipated Load Service                       |
| USACE                   | U.S. Army Corps of Engineers                     |



|          |  |
|----------|--|
| USBR     | U.S. Bureau of Reclamation                                   |
| USFWS    | U.S. Fish & Wildlife Service                                 |
| VER      | Variable Energy Resource                                     |
| VERBS    | Variable Energy Resource Balancing Service                   |
| VOR      | Value of Reserves  |
| VR1-2014 | First Vintage Rate of the BP-14 rate period (PF Tier 2 rate) |
| VR1-2016 | First Vintage Rate of the BP-16 rate period (PF Tier 2 rate) |
| WECC     | Western Electricity Coordinating Council                     |
| WSPP     | Western Systems Power Pool                                   |

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**1. DOCUMENTATION FOR – POWER LOADS AND RESOURCES STUDY.....1**

**Table 1.1.1  
Load Following Service Customers**

|    | <b>A</b>                                | <b>B</b>                          | <b>C</b>                               |
|----|---|-----------------------------------|--|
| 1  | Albion, City of                         | Ellensburg, City of               | Milton, Town of                        |
| 2  | Alder Mutual                            | Elmhurst Mutual P & L             | Minidoka, City of                      |
| 3  | Ashland, City of                        | Energy Northwest                  | Mission Valley Power                   |
| 4  | Asotin County PUD #1                    | Fairchild AFB                     | Missoula Elec Coop                     |
| 5  | Bandon, City of                         | Fall River Rural Elec Coop        | Modern Elec Coop                       |
| 6  | Benton REA                              | Farmers Elec Coop                 | Monmouth, City of                      |
| 7  | Big Bend Elec Coop                      | Ferry County PUD #1               | Nespelem Valley Elec Coop              |
| 8  | Blachly-Lane Electric Coop              | Flathead Elec Coop                | Northern Lights                        |
| 9  | Blaine, City of                         | Forest Grove, City of             | Northern Wasco County PUD              |
| 10 | Bonnors Ferry, City of                  | Glacier Elec Coop                 | Ohop Mutual Light Company              |
| 11 | Burley, City of                         | Grant County PUD #2               | Orcas P & L                            |
| 12 | Canby, City of                          | Harney Elec Coop                  | Oregon Trail Coop                      |
| 13 | Cascade Locks, City of                  | Hermiston, City of                | Parkland L & W                         |
| 14 | Central Lincoln                         | Heyburn, City of                  | Peninsula Light Company                |
| 15 | Central MT Elec Power Coop              | Hood River Elec Coop              | Plummer, City of                       |
| 16 | Centralia, City of                      | Idaho County L & P                | Port Angeles, City of                  |
| 17 | Cheney, City of                         | Inland P & L                      | Port of Seattle                        |
| 18 | Chewelah, City of                       | Jefferson County PUD              | Puget Sound Naval Shipyard (Bremerton) |
| 19 | Clallam County PUD #1                   | Kalispel Tribe Utility            | Raft River Rural Elec Coop             |
| 20 | Clearwater Power                        | Kittitas County PUD #1            | Ravalli Elec Coop                      |
| 21 | Columbia Basin Elec Coop                | Klickitat                         | Richland, City of                      |
| 22 | Columbia Power Coop                     | Kootenai Electric Coop            | Riverside Elec Coop                    |
| 23 | Columbia REA                            | Lakeview L & P (WA)               | Rupert, City of                        |
| 24 | Columbia River PUD                      | Lane Elec Coop                    | Salem Elec Coop                        |
| 25 | Consol Irrig Dist #19                   | Lincoln Elec Coop                 | Salmon River Elec Coop                 |
| 26 | Consumer's Power                        | Lost River Elec Coop              | Skamania County PUD #1                 |
| 27 | Coos-Curry Electric Coop                | Lower Valley P & L                | Soda Springs, City of                  |
| 28 | Coulee Dam, City of                     | Mason County PUD #1               | South Side Elec                        |
| 29 | Declo, City of                          | Mason County PUD #3               | Springfield Utiltiy Board              |
| 30 | Douglas Electric Coop                   | McCleary, City of                 | Steilacoom, Town of                    |
| 31 | Drain, City of                          | McMinnville, City of              | Sumas, Town of                         |
| 32 | East End Mutual Electric                | Midstate Elec Coop                | Surprise Valley Elec Coop              |
| 33 | Eatonville, City of                     | Milton Freewater, City of         | Wahkiakum County PUD #1                |
| 34 | Tanner Elec Coop                        | Umpqua Indian Utility Cooperative | Wasco Elec Coop                        |
| 35 | Tillamook PUD #1                        | United Electric Coop              | Weiser, City of                        |
| 36 | Troy, City of                           | USBIA Wapato                      | Wells Rural Elec Co                    |
| 37 | U.S. Bureau of Reclamation (Roza)       | USDOE-Albany                      | West Oregon Elec Coop                  |
| 38 | U.S. Naval Station, Everett (Jim Creek) | USDOE-Richland                    | Whatcom County PUD #1                  |
| 39 | U.S. Naval Submarine Base (Bangor)      | Vera Irrigation District          | Yakama Power                           |
| 40 | Umatilla Elec Coop                      | Vigilante Elec Coop               |  |

**Table 1.1.2  
Tier 1 Block Service Customers**

|   | <b>A</b>     | <b>B</b>     | <b>C</b> |
|---|--------------|--------------|----------|
| 1 | Okanogan PUD | Pend Oreille | Seattle  |

**Table 1.1.3  
Slice Service Customers**

|   | <b>A</b>   | <b>B</b>     | <b>C</b>  |
|---|------------|--------------|-----------|
| 1 | Benton PUD | EWEB         | Lewis     |
| 2 | Clark      | Franklin     | Pacific   |
| 3 | Clatskanie | Grays Harbor | Snohomish |
| 4 | Cowlitz    | Idaho Falls  | Tacoma    |
| 5 | Emerald    |              |           |

**Table 1.1.4  
USBR Obligation Customers**

|   | <b>A</b>                            | <b>B</b>                                | <b>C</b>                     |
|---|-------------------------------------|---|------------------------------|
| 1 | USBR Chief Joseph Project           | USBR Rathdrum Prairie Project           | USBR Tualatin Valley Project |
| 2 | USBR Columbia Basin Project         | USBR Southern Idaho Projects            | USBR Owyhee Project          |
| 3 | USBR Crooked River Project          | USBR Spokane Indian Development Project | USBR Umatilla Project        |
| 4 | USBR The Dalles Reclamation Project | USBR Spokane Valley Project             | USBR Yakima Project          |

**Table 1.2.1**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
**S183-RC-20190515-110000**

| A                                     | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                            | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Pacific Northwest</b>              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| <b>1 DSI Obligation</b>               | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    |
| 2 Direct Service Industry             | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| <b>3 Load Following</b>               | <b>2,809</b> | <b>3,382</b> | <b>3,885</b> | <b>3,840</b> | <b>3,585</b> | <b>3,146</b> | <b>2,994</b> | <b>2,994</b> | <b>2,904</b> | <b>3,088</b> | <b>3,315</b> | <b>3,240</b> | <b>3,212</b> | <b>2,893</b> | <b>3,256</b> |
| 4 Cooperative                         | 1,519        | 1,810        | 2,111        | 2,069        | 1,932        | 1,690        | 1,642        | 1,642        | 1,674        | 1,858        | 2,009        | 1,928        | 1,913        | 1,644        | 1,824        |
| 5 Municipality                        | 472          | 575          | 655          | 659          | 613          | 535          | 502          | 502          | 463          | 469          | 510          | 512          | 506          | 473          | 536          |
| 6 Public Utility District             | 709          | 862          | 956          | 949          | 888          | 789          | 734          | 734          | 660          | 653          | 676          | 682          | 677          | 669          | 769          |
| 7 Federal Entities                    | 109          | 135          | 163          | 162          | 152          | 132          | 115          | 115          | 107          | 108          | 121          | 118          | 117          | 108          | 127          |
| 8 USBR                                | 108          | 15           | 14           | 10           | 16           | 65           | 244          | 244          | 327          | 353          | 403          | 305          | 313          | 263          | 178          |
| <b>9 Tier 1 Block</b>                 | <b>529</b>   | <b>871</b>   | <b>870</b>   | <b>957</b>   | <b>869</b>   | <b>853</b>   | <b>419</b>   | <b>419</b>   | <b>149</b>   | <b>21</b>    | <b>340</b>   | <b>385</b>   | <b>383</b>   | <b>633</b>   | <b>574</b>   |
| 10 Municipality                       | 478          | 783          | 771          | 837          | 760          | 754          | 377          | 377          | 120          | -            | 287          | 342          | 340          | 574          | 506          |
| 11 Public Utility District            | 50           | 88           | 99           | 120          | 109          | 99           | 42           | 42           | 30           | 21           | 53           | 43           | 43           | 58           | 68           |
| <b>12 Slice Block</b>                 | <b>1,159</b> | <b>1,356</b> | <b>1,559</b> | <b>1,553</b> | <b>1,373</b> | <b>1,312</b> | <b>1,216</b> | <b>1,216</b> | <b>1,179</b> | <b>1,155</b> | <b>1,210</b> | <b>1,182</b> | <b>1,182</b> | <b>1,126</b> | <b>1,282</b> |
| 13 Municipality                       | 268          | 317          | 385          | 381          | 352          | 354          | 313          | 313          | 266          | 256          | 281          | 275          | 275          | 277          | 310          |
| 14 Public Utility District            | 891          | 1,039        | 1,174        | 1,171        | 1,021        | 958          | 904          | 904          | 913          | 899          | 929          | 907          | 907          | 850          | 972          |
| <b>15 Slice Output from T1 System</b> | <b>1,386</b> | <b>1,818</b> | <b>1,740</b> | <b>1,451</b> | <b>1,401</b> | <b>1,463</b> | <b>1,346</b> | <b>1,239</b> | <b>1,603</b> | <b>2,152</b> | <b>1,607</b> | <b>1,672</b> | <b>1,467</b> | <b>1,452</b> | <b>1,577</b> |
| 16 Municipality                       | 329          | 431          | 413          | 344          | 332          | 347          | 319          | 294          | 380          | 510          | 381          | 396          | 348          | 344          | 374          |
| 17 Public Utility District            | 1,057        | 1,387        | 1,327        | 1,107        | 1,069        | 1,116        | 1,026        | 946          | 1,223        | 1,642        | 1,226        | 1,275        | 1,119        | 1,108        | 1,203        |
| <b>Total Power Sales Contracts</b>    |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 18 Cooperative                        | 1,554        | 1,844        | 2,146        | 2,104        | 1,967        | 1,724        | 1,676        | 1,676        | 1,709        | 1,892        | 2,043        | 1,963        | 1,947        | 1,678        | 1,858        |
| 19 Direct Service Industry            | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| 20 Federal Entities                   | 109          | 135          | 163          | 162          | 152          | 132          | 115          | 115          | 107          | 108          | 121          | 118          | 117          | 108          | 127          |
| 21 Municipality                       | 1,561        | 2,121        | 2,238        | 2,236        | 2,072        | 2,004        | 1,525        | 1,500        | 1,243        | 1,251        | 1,473        | 1,539        | 1,483        | 1,682        | 1,741        |
| 22 Public Utility District            | 2,713        | 3,382        | 3,562        | 3,352        | 3,093        | 2,968        | 2,712        | 2,631        | 2,831        | 3,220        | 2,889        | 2,913        | 2,751        | 2,690        | 3,017        |
| 23 USBR                               | 108          | 15           | 14           | 10           | 16           | 65           | 244          | 244          | 327          | 353          | 403          | 305          | 313          | 263          | 178          |
| <b>24 Total Power Sales Contracts</b> | <b>6,057</b> | <b>7,509</b> | <b>8,135</b> | <b>7,876</b> | <b>7,312</b> | <b>6,905</b> | <b>6,285</b> | <b>6,179</b> | <b>6,229</b> | <b>6,835</b> | <b>6,941</b> | <b>6,849</b> | <b>6,622</b> | <b>6,434</b> | <b>6,933</b> |

**Table 1.2.1**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
**S183-RC-20190515-110000**

| A                                     | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                            | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Pacific Northwest</b>              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| <b>1 DSI Obligation</b>               | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    | <b>12</b>    |
| 2 Direct Service Industry             | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| <b>3 Load Following</b>               | <b>2,841</b> | <b>3,407</b> | <b>3,907</b> | <b>3,873</b> | <b>3,657</b> | <b>3,160</b> | <b>3,019</b> | <b>3,019</b> | <b>2,931</b> | <b>3,120</b> | <b>3,342</b> | <b>3,230</b> | <b>3,268</b> | <b>2,911</b> | <b>3,284</b> |
| 4 Cooperative                         | 1,537        | 1,829        | 2,131        | 2,088        | 1,985        | 1,705        | 1,657        | 1,657        | 1,686        | 1,871        | 2,022        | 1,922        | 1,944        | 1,656        | 1,841        |
| 5 Municipality                        | 479          | 573          | 649          | 664          | 629          | 543          | 501          | 501          | 464          | 475          | 510          | 503          | 511          | 465          | 538          |
| 6 Public Utility District             | 712          | 865          | 959          | 953          | 882          | 773          | 737          | 737          | 662          | 655          | 678          | 677          | 685          | 671          | 769          |
| 7 Federal Entities                    | 114          | 140          | 168          | 168          | 161          | 138          | 124          | 124          | 118          | 119          | 132          | 128          | 129          | 119          | 136          |
| 8 USBR                                | 108          | 15           | 14           | 10           | 16           | 65           | 244          | 244          | 327          | 353          | 403          | 315          | 304          | 263          | 178          |
| <b>9 Tier 1 Block</b>                 | <b>526</b>   | <b>865</b>   | <b>865</b>   | <b>950</b>   | <b>894</b>   | <b>848</b>   | <b>417</b>   | <b>417</b>   | <b>148</b>   | <b>21</b>    | <b>338</b>   | <b>380</b>   | <b>383</b>   | <b>629</b>   | <b>572</b>   |
| 10 Municipality                       | 476          | 779          | 767          | 832          | 783          | 750          | 375          | 375          | 119          | -            | 285          | 337          | 340          | 571          | 505          |
| 11 Public Utility District            | 50           | 86           | 98           | 118          | 111          | 97           | 42           | 42           | 30           | 21           | 53           | 43           | 43           | 57           | 67           |
| <b>12 Slice Block</b>                 | <b>1,191</b> | <b>1,392</b> | <b>1,598</b> | <b>1,591</b> | <b>1,459</b> | <b>1,346</b> | <b>1,250</b> | <b>1,250</b> | <b>1,211</b> | <b>1,187</b> | <b>1,243</b> | <b>1,214</b> | <b>1,214</b> | <b>1,158</b> | <b>1,320</b> |
| 13 Municipality                       | 269          | 318          | 387          | 383          | 367          | 355          | 314          | 314          | 267          | 258          | 282          | 276          | 276          | 278          | 313          |
| 14 Public Utility District            | 922          | 1,074        | 1,211        | 1,208        | 1,092        | 990          | 936          | 936          | 944          | 929          | 960          | 938          | 938          | 880          | 1,007        |
| <b>15 Slice Output from T1 System</b> | <b>1,389</b> | <b>1,820</b> | <b>1,744</b> | <b>1,453</b> | <b>1,405</b> | <b>1,467</b> | <b>1,244</b> | <b>1,094</b> | <b>1,610</b> | <b>2,084</b> | <b>1,607</b> | <b>1,672</b> | <b>1,463</b> | <b>1,451</b> | <b>1,564</b> |
| 16 Municipality                       | 330          | 432          | 414          | 345          | 333          | 348          | 295          | 260          | 382          | 494          | 381          | 396          | 347          | 344          | 371          |
| 17 Public Utility District            | 1,060        | 1,389        | 1,330        | 1,108        | 1,071        | 1,119        | 949          | 835          | 1,228        | 1,590        | 1,226        | 1,275        | 1,116        | 1,107        | 1,193        |
| <b>Total Power Sales Contracts</b>    |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 18 Cooperative                        | 1,583        | 1,875        | 2,178        | 2,134        | 2,031        | 1,752        | 1,703        | 1,703        | 1,732        | 1,917        | 2,068        | 1,968        | 1,990        | 1,702        | 1,888        |
| 19 Direct Service Industry            | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| 20 Federal Entities                   | 114          | 140          | 168          | 168          | 161          | 138          | 124          | 124          | 118          | 119          | 132          | 128          | 129          | 119          | 136          |
| 21 Municipality                       | 1,565        | 2,115        | 2,229        | 2,237        | 2,124        | 2,009        | 1,498        | 1,462        | 1,245        | 1,239        | 1,472        | 1,525        | 1,486        | 1,671        | 1,739        |
| 22 Public Utility District            | 2,748        | 3,418        | 3,603        | 3,392        | 3,161        | 2,985        | 2,669        | 2,554        | 2,869        | 3,200        | 2,922        | 2,938        | 2,786        | 2,720        | 3,040        |
| 23 USBR                               | 108          | 15           | 14           | 10           | 16           | 65           | 244          | 244          | 327          | 353          | 403          | 315          | 304          | 263          | 178          |
| <b>24 Total Power Sales Contracts</b> | <b>6,131</b> | <b>7,576</b> | <b>8,203</b> | <b>7,953</b> | <b>7,506</b> | <b>6,960</b> | <b>6,250</b> | <b>6,100</b> | <b>6,303</b> | <b>6,840</b> | <b>7,008</b> | <b>6,886</b> | <b>6,707</b> | <b>6,488</b> | <b>6,993</b> |

**Table 1.2.2**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
**S183-RC-20190515-110000**

| A                                     | B                | C                | D                | E                | F                | G                | H                | I                | J                | K                | L                | M                | N                | O                | P                 |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                               | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16            | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Pacific Northwest</b>              |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| <b>1 DSI Obligation</b>               | <b>5,084</b>     | <b>4,747</b>     | <b>4,809</b>     | <b>4,826</b>     | <b>4,694</b>     | <b>5,088</b>     | <b>2,442</b>     | <b>2,442</b>     | <b>4,886</b>     | <b>4,936</b>     | <b>4,824</b>     | <b>2,565</b>     | <b>2,565</b>     | <b>4,570</b>     | <b>58,479</b>     |
| 2 Direct Service Industry             | 5,084            | 4,747            | 4,809            | 4,826            | 4,694            | 5,088            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,565            | 2,565            | 4,570            | 58,479            |
| <b>3 Load Following</b>               | <b>1,305,357</b> | <b>1,442,083</b> | <b>1,687,778</b> | <b>1,687,676</b> | <b>1,510,753</b> | <b>1,407,969</b> | <b>661,824</b>   | <b>661,824</b>   | <b>1,271,187</b> | <b>1,378,879</b> | <b>1,489,089</b> | <b>740,040</b>   | <b>740,040</b>   | <b>1,253,836</b> | <b>17,238,336</b> |
| 4 Cooperative                         | 702,917          | 769,410          | 917,471          | 905,941          | 808,967          | 755,973          | 361,297          | 361,297          | 729,611          | 822,094          | 892,795          | 438,384          | 438,384          | 707,421          | 9,611,962         |
| 5 Municipality                        | 224,045          | 248,832          | 287,414          | 294,340          | 262,658          | 242,345          | 113,558          | 113,558          | 208,558          | 216,930          | 238,301          | 119,959          | 119,959          | 211,166          | 2,901,622         |
| 6 Public Utility District             | 329,492          | 368,592          | 414,476          | 418,721          | 377,474          | 352,765          | 162,361          | 162,361          | 287,340          | 292,647          | 304,579          | 155,165          | 155,165          | 289,997          | 4,071,137         |
| 7 Federal Entities                    | 48,903           | 55,249           | 68,417           | 68,675           | 61,654           | 56,886           | 24,608           | 24,608           | 45,678           | 47,208           | 53,414           | 26,532           | 26,532           | 45,252           | 653,614           |
| 8 USBR                                | 28,276           | 5,099            | 4,212            | 4,882            | 5,690            | 16,045           | 49,172           | 49,172           | 119,418          | 129,331          | 146,217          | 44,999           | 44,999           | 78,903           | 726,416           |
| <b>9 Tier 1 Block</b>                 | <b>235,213</b>   | <b>374,039</b>   | <b>383,941</b>   | <b>423,546</b>   | <b>361,152</b>   | <b>377,498</b>   | <b>90,164</b>    | <b>90,164</b>    | <b>65,222</b>    | <b>8,808</b>     | <b>150,137</b>   | <b>84,998</b>    | <b>84,998</b>    | <b>271,477</b>   | <b>3,001,358</b>  |
| 10 Municipality                       | 213,443          | 338,840          | 344,176          | 373,524          | 317,496          | 336,172          | 81,375           | 81,375           | 53,360           | -                | 128,066          | 76,039           | 76,039           | 248,127          | 2,668,030         |
| 11 Public Utility District            | 21,771           | 35,199           | 39,765           | 50,022           | 43,656           | 41,327           | 8,789            | 8,789            | 11,862           | 8,808            | 22,072           | 8,959            | 8,959            | 23,350           | 333,329           |
| <b>12 Slice Block</b>                 | <b>500,558</b>   | <b>542,483</b>   | <b>623,758</b>   | <b>645,867</b>   | <b>549,359</b>   | <b>545,583</b>   | <b>252,987</b>   | <b>252,987</b>   | <b>471,755</b>   | <b>480,470</b>   | <b>503,480</b>   | <b>245,754</b>   | <b>245,754</b>   | <b>450,536</b>   | <b>6,311,331</b>  |
| 13 Municipality                       | 115,750          | 126,734          | 154,000          | 158,654          | 140,782          | 147,067          | 65,005           | 65,005           | 106,436          | 106,682          | 116,812          | 57,120           | 57,120           | 110,617          | 1,527,783         |
| 14 Public Utility District            | 384,808          | 415,749          | 469,757          | 487,213          | 408,577          | 398,516          | 187,982          | 187,982          | 365,319          | 373,788          | 386,669          | 188,634          | 188,634          | 339,918          | 4,783,547         |
| <b>15 Slice Output from T1 System</b> | <b>671,479</b>   | <b>818,617</b>   | <b>801,517</b>   | <b>676,981</b>   | <b>616,694</b>   | <b>689,762</b>   | <b>306,136</b>   | <b>281,857</b>   | <b>758,304</b>   | <b>1,005,694</b> | <b>833,356</b>   | <b>422,643</b>   | <b>376,826</b>   | <b>670,481</b>   | <b>8,930,347</b>  |
| 16 Municipality                       | 159,244          | 194,138          | 190,083          | 160,549          | 146,252          | 163,580          | 72,601           | 66,844           | 179,835          | 238,505          | 197,634          | 100,232          | 89,366           | 159,007          | 2,117,869         |
| 17 Public Utility District            | 512,235          | 624,479          | 611,434          | 516,432          | 470,443          | 526,182          | 233,534          | 215,014          | 578,469          | 767,189          | 635,722          | 322,412          | 287,460          | 511,473          | 6,812,478         |
| <b>Total Power Sales Contracts</b>    |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| 18 Cooperative                        | 717,853          | 783,240          | 931,301          | 920,323          | 822,797          | 770,355          | 368,488          | 368,488          | 743,441          | 836,477          | 907,178          | 445,575          | 445,575          | 721,250          | 9,782,343         |
| 19 Direct Service Industry            | 5,084            | 4,747            | 4,809            | 4,826            | 4,694            | 5,088            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,565            | 2,565            | 4,570            | 58,479            |
| 20 Federal Entities                   | 48,903           | 55,249           | 68,417           | 68,675           | 61,654           | 56,886           | 24,608           | 24,608           | 45,678           | 47,208           | 53,414           | 26,532           | 26,532           | 45,252           | 653,614           |
| 21 Municipality                       | 718,704          | 914,305          | 981,435          | 993,059          | 872,950          | 895,156          | 335,535          | 329,777          | 553,951          | 568,109          | 686,805          | 356,346          | 345,480          | 734,679          | 9,286,292         |
| 22 Public Utility District            | 1,250,559        | 1,446,105        | 1,537,518        | 1,474,558        | 1,302,236        | 1,320,958        | 593,752          | 575,231          | 1,245,075        | 1,444,602        | 1,351,210        | 676,254          | 641,302          | 1,166,825        | 16,026,185        |
| 23 USBR                               | 28,276           | 5,099            | 4,212            | 4,882            | 5,690            | 16,045           | 49,172           | 49,172           | 119,418          | 129,331          | 146,217          | 44,999           | 44,999           | 78,903           | 726,416           |
| <b>24 Total Power Sales Contracts</b> | <b>2,769,379</b> | <b>3,208,745</b> | <b>3,527,692</b> | <b>3,466,323</b> | <b>3,070,020</b> | <b>3,064,488</b> | <b>1,373,998</b> | <b>1,349,719</b> | <b>2,712,449</b> | <b>3,030,663</b> | <b>3,149,647</b> | <b>1,552,272</b> | <b>1,506,455</b> | <b>2,751,480</b> | <b>36,533,330</b> |



**Table 1.2.2**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
**S183-RC-20190515-110000**

| A                                     | B                | C                | D                | E                | F                | G                | H                | I                | J                | K                | L                | M                | N                | O                | P                 |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                               | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16            | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Pacific Northwest</b>              |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| <b>1 DSI Obligation</b>               | <b>5,084</b>     | <b>4,740</b>     | <b>4,809</b>     | <b>4,826</b>     | <b>4,533</b>     | <b>5,081</b>     | <b>2,442</b>     | <b>2,442</b>     | <b>4,886</b>     | <b>4,936</b>     | <b>4,824</b>     | <b>2,368</b>     | <b>2,762</b>     | <b>4,570</b>     | <b>58,303</b>     |
| 2 Direct Service Industry             | 5,084            | 4,740            | 4,809            | 4,826            | 4,533            | 5,081            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,368            | 2,762            | 4,570            | 58,303            |
| <b>3 Load Following</b>               | <b>1,320,883</b> | <b>1,428,197</b> | <b>1,724,847</b> | <b>1,674,545</b> | <b>1,484,833</b> | <b>1,437,708</b> | <b>667,728</b>   | <b>667,728</b>   | <b>1,282,672</b> | <b>1,393,501</b> | <b>1,501,054</b> | <b>688,755</b>   | <b>803,547</b>   | <b>1,261,452</b> | <b>17,337,453</b> |
| 4 Cooperative                         | 711,949          | 768,919          | 935,825          | 904,500          | 801,162          | 771,221          | 364,943          | 364,943          | 734,440          | 828,544          | 898,663          | 407,788          | 475,752          | 712,772          | 9,681,420         |
| 5 Municipality                        | 227,235          | 242,129          | 291,440          | 289,307          | 259,358          | 251,897          | 113,417          | 113,417          | 209,420          | 219,457          | 238,749          | 110,498          | 128,915          | 208,088          | 2,903,327         |
| 6 Public Utility District             | 330,642          | 360,514          | 426,280          | 410,235          | 361,248          | 354,365          | 162,984          | 162,984          | 288,562          | 293,594          | 305,606          | 143,720          | 167,673          | 290,870          | 4,059,278         |
| 7 Federal Entities                    | 51,057           | 56,635           | 71,302           | 70,503           | 63,065           | 60,225           | 26,385           | 26,385           | 50,252           | 51,906           | 58,037           | 26,749           | 31,207           | 49,722           | 693,428           |
| 8 USBR                                | 28,276           | 4,613            | 4,693            | 4,567            | 5,417            | 18,335           | 49,172           | 49,172           | 119,418          | 129,331          | 146,217          | 41,538           | 48,461           | 78,903           | 728,114           |
| <b>9 Tier 1 Block</b>                 | <b>233,899</b>   | <b>370,160</b>   | <b>383,045</b>   | <b>418,752</b>   | <b>358,382</b>   | <b>376,502</b>   | <b>89,699</b>    | <b>89,699</b>    | <b>64,916</b>    | <b>8,783</b>     | <b>149,248</b>   | <b>77,996</b>    | <b>90,995</b>    | <b>269,791</b>   | <b>2,981,869</b>  |
| 10 Municipality                       | 212,347          | 337,101          | 342,410          | 371,607          | 315,866          | 334,447          | 80,957           | 80,957           | 53,087           | -                | 127,408          | 69,829           | 81,468           | 246,854          | 2,654,338         |
| 11 Public Utility District            | 21,552           | 33,059           | 40,636           | 47,144           | 42,516           | 42,055           | 8,742            | 8,742            | 11,829           | 8,783            | 21,840           | 8,167            | 9,528            | 22,938           | 327,531           |
| <b>12 Slice Block</b>                 | <b>514,598</b>   | <b>534,526</b>   | <b>664,824</b>   | <b>636,389</b>   | <b>560,158</b>   | <b>581,377</b>   | <b>259,940</b>   | <b>259,940</b>   | <b>484,492</b>   | <b>493,750</b>   | <b>516,917</b>   | <b>233,050</b>   | <b>271,891</b>   | <b>463,263</b>   | <b>6,475,113</b>  |
| 13 Municipality                       | 116,408          | 122,290          | 160,997          | 153,378          | 140,745          | 153,519          | 65,348           | 65,348           | 106,985          | 107,252          | 117,463          | 53,028           | 61,865           | 111,221          | 1,535,847         |
| 14 Public Utility District            | 398,190          | 412,236          | 503,827          | 483,011          | 419,412          | 427,858          | 194,592          | 194,592          | 377,506          | 386,497          | 399,454          | 180,022          | 210,026          | 352,042          | 4,939,266         |
| <b>15 Slice Output from T1 System</b> | <b>674,336</b>   | <b>826,098</b>   | <b>807,905</b>   | <b>680,693</b>   | <b>592,858</b>   | <b>694,306</b>   | <b>279,732</b>   | <b>247,539</b>   | <b>792,810</b>   | <b>973,674</b>   | <b>812,676</b>   | <b>418,964</b>   | <b>377,261</b>   | <b>668,321</b>   | <b>8,847,174</b>  |
| 16 Municipality                       | 159,922          | 195,913          | 191,598          | 161,429          | 140,599          | 164,658          | 66,340           | 58,705           | 188,018          | 230,911          | 192,730          | 99,359           | 89,469           | 158,495          | 2,098,144         |
| 17 Public Utility District            | 514,414          | 630,186          | 616,307          | 519,264          | 452,259          | 529,648          | 213,392          | 188,834          | 604,792          | 742,763          | 619,947          | 319,605          | 287,792          | 509,826          | 6,749,030         |
| <b>Total Power Sales Contracts</b>    |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| 18 Cooperative                        | 731,933          | 786,684          | 955,069          | 923,004          | 818,926          | 791,205          | 374,565          | 374,565          | 752,944          | 847,789          | 917,907          | 416,670          | 486,115          | 731,276          | 9,908,654         |
| 19 Direct Service Industry            | 5,084            | 4,740            | 4,809            | 4,826            | 4,533            | 5,081            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,368            | 2,762            | 4,570            | 58,303            |
| 20 Federal Entities                   | 51,057           | 56,635           | 71,302           | 70,503           | 63,065           | 60,225           | 26,385           | 26,385           | 50,252           | 51,906           | 58,037           | 26,749           | 31,207           | 49,722           | 693,428           |
| 21 Municipality                       | 721,224          | 902,155          | 991,561          | 980,640          | 861,290          | 909,832          | 328,619          | 320,985          | 562,429          | 562,736          | 681,465          | 335,075          | 364,471          | 729,576          | 9,252,059         |
| 22 Public Utility District            | 1,266,932        | 1,437,892        | 1,589,104        | 1,461,630        | 1,277,333        | 1,356,061        | 580,738          | 556,180          | 1,284,665        | 1,433,692        | 1,348,901        | 652,462          | 676,125          | 1,177,651        | 16,099,365        |
| 23 USBR                               | 28,276           | 4,613            | 4,693            | 4,567            | 5,417            | 18,335           | 49,172           | 49,172           | 119,418          | 129,331          | 146,217          | 41,538           | 48,461           | 78,903           | 728,114           |
| <b>24 Total Power Sales Contracts</b> | <b>2,804,507</b> | <b>3,192,718</b> | <b>3,616,538</b> | <b>3,445,170</b> | <b>3,030,564</b> | <b>3,140,739</b> | <b>1,361,922</b> | <b>1,329,729</b> | <b>2,774,592</b> | <b>3,030,391</b> | <b>3,157,351</b> | <b>1,474,861</b> | <b>1,609,141</b> | <b>2,771,699</b> | <b>36,739,924</b> |

**Table 1.2.3**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
**S183-RC-20190515-110000**

| A                                     | B                | C                | D                | E                | F                | G                | H              | I              | J                | K                | L                | M              | N                | O                | P                 |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|------------------|----------------|------------------|------------------|-------------------|
| LLH-MWh                               | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1           | Apr16          | May              | Jun              | Jul              | Aug1           | Aug16            | Sep              | Sum               |
| <b>Pacific Northwest</b>              |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                  |                  |                   |
| <b>1 DSI Obligation</b>               | <b>3,844</b>     | <b>3,905</b>     | <b>4,119</b>     | <b>4,102</b>     | <b>3,657</b>     | <b>3,840</b>     | <b>1,878</b>   | <b>1,878</b>   | <b>4,043</b>     | <b>3,704</b>     | <b>4,104</b>     | <b>1,760</b>   | <b>2,038</b>     | <b>4,070</b>     | <b>46,941</b>     |
| 2 Direct Service Industry             | 3,844            | 3,905            | 4,119            | 4,102            | 3,657            | 3,840            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,760          | 2,038            | 4,070            | 46,941            |
| <b>3 Load Following</b>               | <b>784,746</b>   | <b>996,226</b>   | <b>1,202,782</b> | <b>1,169,117</b> | <b>984,473</b>   | <b>929,660</b>   | <b>415,885</b> | <b>415,885</b> | <b>889,632</b>   | <b>844,701</b>   | <b>977,411</b>   | <b>426,223</b> | <b>493,521</b>   | <b>829,188</b>   | <b>11,359,448</b> |
| 4 Cooperative                         | 427,489          | 535,498          | 653,385          | 633,577          | 536,032          | 499,601          | 229,738        | 229,738        | 515,895          | 515,387          | 601,653          | 255,699        | 296,073          | 475,965          | 6,405,730         |
| 5 Municipality                        | 126,980          | 165,617          | 200,203          | 196,203          | 163,934          | 155,155          | 67,162         | 67,162         | 135,592          | 121,068          | 141,024          | 64,234         | 74,377           | 129,243          | 1,807,954         |
| 6 Public Utility District             | 198,232          | 252,848          | 296,631          | 287,479          | 240,421          | 233,697          | 102,036        | 102,036        | 203,878          | 177,677          | 198,245          | 90,413         | 104,689          | 191,628          | 2,679,909         |
| 7 Federal Entities                    | 32,045           | 42,263           | 52,563           | 51,858           | 44,086           | 41,208           | 16,949         | 16,949         | 34,267           | 30,569           | 36,490           | 15,876         | 18,382           | 32,352           | 465,855           |
| 8 USBR                                | 52,406           | 5,962            | 6,545            | 2,837            | 5,646            | 32,151           | 38,776         | 38,776         | 123,969          | 124,588          | 153,457          | 64,867         | 75,109           | 110,806          | 835,895           |
| <b>9 Tier 1 Block</b>                 | <b>158,018</b>   | <b>254,140</b>   | <b>263,649</b>   | <b>288,456</b>   | <b>243,969</b>   | <b>256,600</b>   | <b>60,673</b>  | <b>60,673</b>  | <b>45,775</b>    | <b>6,436</b>     | <b>102,780</b>   | <b>53,531</b>  | <b>61,983</b>    | <b>184,098</b>   | <b>2,040,780</b>  |
| 10 Municipality                       | 142,295          | 225,893          | 229,450          | 249,016          | 211,664          | 224,114          | 54,250         | 54,250         | 35,574           | -                | 85,377           | 46,983         | 54,402           | 165,418          | 1,778,686         |
| 11 Public Utility District            | 15,723           | 28,247           | 34,199           | 39,440           | 32,306           | 32,486           | 6,423          | 6,423          | 10,201           | 6,436            | 17,403           | 6,547          | 7,581            | 18,680           | 262,094           |
| <b>12 Slice Block</b>                 | <b>361,507</b>   | <b>435,334</b>   | <b>536,442</b>   | <b>509,242</b>   | <b>406,529</b>   | <b>428,863</b>   | <b>184,873</b> | <b>184,873</b> | <b>405,716</b>   | <b>351,109</b>   | <b>396,975</b>   | <b>179,589</b> | <b>207,945</b>   | <b>360,421</b>   | <b>4,949,419</b>  |
| 13 Municipality                       | 83,595           | 101,702          | 132,442          | 125,093          | 104,180          | 115,604          | 47,503         | 47,503         | 91,537           | 77,959           | 92,101           | 41,741         | 48,332           | 88,492           | 1,197,785         |
| 14 Public Utility District            | 277,912          | 333,632          | 403,999          | 384,149          | 302,349          | 313,258          | 137,370        | 137,370        | 314,179          | 273,150          | 304,873          | 137,848        | 159,613          | 271,929          | 3,751,634         |
| <b>15 Slice Output from T1 System</b> | <b>359,854</b>   | <b>492,372</b>   | <b>492,706</b>   | <b>402,249</b>   | <b>358,721</b>   | <b>397,036</b>   | <b>178,245</b> | <b>164,354</b> | <b>434,139</b>   | <b>543,877</b>   | <b>361,989</b>   | <b>179,220</b> | <b>186,383</b>   | <b>375,082</b>   | <b>4,926,228</b>  |
| 16 Municipality                       | 85,341           | 116,768          | 116,847          | 95,395           | 85,072           | 94,159           | 42,272         | 38,977         | 102,958          | 128,983          | 85,847           | 42,503         | 44,202           | 88,952           | 1,168,276         |
| 17 Public Utility District            | 274,513          | 375,604          | 375,859          | 306,854          | 273,649          | 302,877          | 135,974        | 125,377        | 331,181          | 414,894          | 276,142          | 136,717        | 142,182          | 286,130          | 3,757,953         |
| <b>Total Power Sales Contracts</b>    |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                  |                  |                   |
| 18 Cooperative                        | 438,276          | 546,596          | 665,278          | 644,918          | 546,266          | 510,906          | 234,993        | 234,993        | 527,788          | 525,898          | 612,993          | 260,955        | 302,158          | 487,029          | 6,539,047         |
| 19 Direct Service Industry            | 3,844            | 3,905            | 4,119            | 4,102            | 3,657            | 3,840            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,760          | 2,038            | 4,070            | 46,941            |
| 20 Federal Entities                   | 32,045           | 42,263           | 52,563           | 51,858           | 44,086           | 41,208           | 16,949         | 16,949         | 34,267           | 30,569           | 36,490           | 15,876         | 18,382           | 32,352           | 465,855           |
| 21 Municipality                       | 442,705          | 614,604          | 683,898          | 670,431          | 569,113          | 593,743          | 213,376        | 210,082        | 370,616          | 332,389          | 409,074          | 197,651        | 223,847          | 476,715          | 6,008,246         |
| 22 Public Utility District            | 768,007          | 992,005          | 1,112,481        | 1,019,632        | 850,269          | 884,023          | 382,595        | 371,998        | 861,233          | 873,743          | 798,373          | 372,318        | 414,983          | 770,035          | 10,471,696        |
| 23 USBR                               | 52,406           | 5,962            | 6,545            | 2,837            | 5,646            | 32,151           | 38,776         | 38,776         | 123,969          | 124,588          | 153,457          | 64,867         | 75,109           | 110,806          | 835,895           |
| <b>24 Total Power Sales Contracts</b> | <b>1,737,282</b> | <b>2,205,335</b> | <b>2,524,884</b> | <b>2,393,777</b> | <b>2,019,037</b> | <b>2,065,872</b> | <b>888,567</b> | <b>874,676</b> | <b>1,921,917</b> | <b>1,890,891</b> | <b>2,014,491</b> | <b>913,426</b> | <b>1,036,517</b> | <b>1,881,007</b> | <b>24,367,680</b> |

**Table 1.2.3**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
**S183-RC-20190515-110000**

| A                                     | B                | C                | D                | E                | F                | G                | H              | I              | J                | K                | L                | M                | N              | O                | P                 |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|------------------|------------------|----------------|------------------|-------------------|
| LLH-MWh                               | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1           | Apr16          | May              | Jun              | Jul              | Aug1             | Aug16          | Sep              | Sum               |
| <b>Pacific Northwest</b>              |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                  |                |                  |                   |
| <b>1 DSI Obligation</b>               | <b>3,844</b>     | <b>3,900</b>     | <b>4,119</b>     | <b>4,102</b>     | <b>3,531</b>     | <b>3,835</b>     | <b>1,878</b>   | <b>1,878</b>   | <b>4,043</b>     | <b>3,704</b>     | <b>4,104</b>     | <b>1,945</b>     | <b>1,852</b>   | <b>4,070</b>     | <b>46,805</b>     |
| 2 Direct Service Industry             | 3,844            | 3,900            | 4,119            | 4,102            | 3,531            | 3,835            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,945            | 1,852          | 4,070            | 46,805            |
| <b>3 Load Following</b>               | <b>792,462</b>   | <b>1,028,532</b> | <b>1,181,725</b> | <b>1,206,720</b> | <b>972,681</b>   | <b>909,923</b>   | <b>419,284</b> | <b>419,284</b> | <b>897,853</b>   | <b>852,642</b>   | <b>985,445</b>   | <b>474,040</b>   | <b>451,466</b> | <b>834,155</b>   | <b>11,426,211</b> |
| 4 Cooperative                         | 431,263          | 549,558          | 649,841          | 648,716          | 532,602          | 495,857          | 231,508        | 231,508        | 519,937          | 518,276          | 605,792          | 284,132          | 270,601        | 479,339          | 6,448,930         |
| 5 Municipality                        | 128,782          | 171,207          | 191,251          | 204,637          | 163,154          | 151,555          | 67,072         | 67,072         | 135,817          | 122,275          | 140,912          | 70,585           | 67,224         | 126,987          | 1,808,529         |
| 6 Public Utility District             | 198,785          | 263,122          | 287,153          | 298,604          | 231,502          | 219,954          | 102,402        | 102,402        | 324,327          | 178,283          | 198,768          | 100,133          | 95,365         | 192,013          | 2,672,813         |
| 7 Federal Entities                    | 33,631           | 44,645           | 53,480           | 54,763           | 45,422           | 42,556           | 18,303         | 18,303         | 37,773           | 33,808           | 39,972           | 19,190           | 18,276         | 35,817           | 495,939           |
| 8 USBR                                | 52,406           | 6,448            | 6,064            | 3,153            | 5,528            | 29,861           | 38,776         | 38,776         | 123,969          | 124,588          | 153,457          | 71,695           | 68,281         | 110,806          | 833,809           |
| <b>9 Tier 1 Block</b>                 | <b>157,130</b>   | <b>253,747</b>   | <b>260,313</b>   | <b>288,283</b>   | <b>242,464</b>   | <b>253,240</b>   | <b>60,360</b>  | <b>60,360</b>  | <b>45,565</b>    | <b>6,419</b>     | <b>102,159</b>   | <b>58,808</b>    | <b>56,008</b>  | <b>182,919</b>   | <b>2,027,773</b>  |
| 10 Municipality                       | 141,565          | 224,734          | 228,273          | 247,738          | 210,578          | 222,964          | 53,972         | 53,972         | 35,391           | -                | 84,939           | 51,663           | 49,202         | 164,569          | 1,769,558         |
| 11 Public Utility District            | 15,565           | 29,013           | 32,040           | 40,545           | 31,886           | 30,276           | 6,388          | 6,388          | 10,173           | 6,419            | 17,220           | 7,146            | 6,805          | 18,350           | 258,215           |
| <b>12 Slice Block</b>                 | <b>371,647</b>   | <b>469,110</b>   | <b>524,188</b>   | <b>547,305</b>   | <b>420,116</b>   | <b>418,532</b>   | <b>189,955</b> | <b>189,955</b> | <b>416,670</b>   | <b>360,813</b>   | <b>407,569</b>   | <b>203,918</b>   | <b>194,208</b> | <b>370,604</b>   | <b>5,084,588</b>  |
| 13 Municipality                       | 84,071           | 107,324          | 126,940          | 131,907          | 105,558          | 110,518          | 47,754         | 47,754         | 92,009           | 78,376           | 92,615           | 46,399           | 44,190         | 88,975           | 1,204,390         |
| 14 Public Utility District            | 287,576          | 361,786          | 397,248          | 415,398          | 314,557          | 308,014          | 142,201        | 142,201        | 324,661          | 282,437          | 314,954          | 157,519          | 150,018        | 281,629          | 3,880,198         |
| <b>15 Slice Output from T1 System</b> | <b>359,443</b>   | <b>486,248</b>   | <b>489,527</b>   | <b>400,379</b>   | <b>351,035</b>   | <b>395,713</b>   | <b>168,100</b> | <b>146,402</b> | <b>405,047</b>   | <b>526,615</b>   | <b>383,165</b>   | <b>182,898</b>   | <b>184,344</b> | <b>376,650</b>   | <b>4,855,566</b>  |
| 16 Municipality                       | 85,243           | 115,316          | 116,093          | 94,952           | 83,249           | 93,845           | 39,866         | 34,720         | 96,059           | 124,889          | 90,869           | 43,375           | 43,718         | 89,324           | 1,151,518         |
| 17 Public Utility District            | 274,199          | 370,932          | 373,434          | 305,428          | 267,785          | 301,868          | 128,235        | 111,682        | 308,988          | 401,726          | 292,296          | 139,523          | 140,626        | 287,326          | 3,704,048         |
| <b>Total Power Sales Contracts</b>    |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                  |                |                  |                   |
| 18 Cooperative                        | 445,697          | 565,148          | 665,014          | 664,630          | 545,926          | 510,244          | 238,540        | 238,540        | 535,851          | 532,339          | 620,965          | 291,903          | 278,003        | 494,142          | 6,626,942         |
| 19 Direct Service Industry            | 3,844            | 3,900            | 4,119            | 4,102            | 3,531            | 3,835            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,945            | 1,852          | 4,070            | 46,805            |
| 20 Federal Entities                   | 33,631           | 44,645           | 53,480           | 54,763           | 45,422           | 42,556           | 18,303         | 18,303         | 37,773           | 33,808           | 39,972           | 19,190           | 18,276         | 35,817           | 495,939           |
| 21 Municipality                       | 443,498          | 622,724          | 666,590          | 683,464          | 566,081          | 582,707          | 210,532        | 205,386        | 363,505          | 329,278          | 413,369          | 214,088          | 206,302        | 473,791          | 5,981,314         |
| 22 Public Utility District            | 777,667          | 1,026,517        | 1,091,494        | 1,061,672        | 847,153          | 861,648          | 379,976        | 363,424        | 849,849          | 870,366          | 824,858          | 405,151          | 393,605        | 780,898          | 10,534,280        |
| 23 USBR                               | 52,406           | 6,448            | 6,064            | 3,153            | 5,528            | 29,861           | 38,776         | 38,776         | 123,969          | 124,588          | 153,457          | 71,695           | 68,281         | 110,806          | 833,809           |
| <b>24 Total Power Sales Contracts</b> | <b>1,756,742</b> | <b>2,269,383</b> | <b>2,486,762</b> | <b>2,471,784</b> | <b>2,013,642</b> | <b>2,030,851</b> | <b>888,004</b> | <b>866,306</b> | <b>1,914,989</b> | <b>1,894,084</b> | <b>2,056,726</b> | <b>1,003,972</b> | <b>966,319</b> | <b>1,899,524</b> | <b>24,519,088</b> |

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**2. OTHER CONTRACT DELIVERIES AND PURCHASE FORECASTS.....11**

**Table 2.1.1**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                             | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|-------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                    | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Canada</b>                 |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 BPA-P to BCHP Trty CEA      | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 469        | 440        | 454        | 454        |
| 2 BPA-P to BCHP NTSA Del      | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | 21         | 61         | 147        | -          | 11         |
| <b>3 Total Exports to CAN</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>476</b> | <b>531</b> | <b>587</b> | <b>454</b> | <b>465</b> |
| <b>Inland Southwest</b>       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 4 BPA-P to Other Entities     | 15         | 14         | 13         | 25         | 25         | 25         | -          | -          | -          | -          | 25         | 25         | 25         | 25         | 16         |
| <b>5 Total Exports to ISW</b> | <b>15</b>  | <b>14</b>  | <b>13</b>  | <b>25</b>  | <b>25</b>  | <b>25</b>  | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>25</b>  | <b>25</b>  | <b>25</b>  | <b>25</b>  | <b>16</b>  |
| <b>Pacific Southwest</b>      |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 6 BPA-P to Other Entities     | 105        | 105        | 105        | 55         | 50         | 50         | 50         | 50         | 50         | 50         | 50         | 50         | 50         | 50         | 64         |
| 7 Intertie Losses             | 3          | 3          | 3          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          | 2          |
| <b>8 Total Exports to PSW</b> | <b>108</b> | <b>108</b> | <b>108</b> | <b>57</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>66</b>  |
| <b>Total Exports</b>          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 9 Federal Entities            | 577        | 576        | 576        | 536        | 531        | 531        | 506        | 506        | 506        | 506        | 552        | 607        | 663        | 531        | 547        |
| <b>10 Total Exports</b>       | <b>577</b> | <b>576</b> | <b>576</b> | <b>536</b> | <b>531</b> | <b>531</b> | <b>506</b> | <b>506</b> | <b>506</b> | <b>506</b> | <b>552</b> | <b>607</b> | <b>663</b> | <b>531</b> | <b>547</b> |

**Table 2.1.1**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                             | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|-------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                    | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Canada</b>                 |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 BPA-P to BCHP Trty CEA      | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 469        | 440        | 454        | 454        |
| 2 BPA-P to BCHP NTSA Del      | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | 21         | 61         | 147        | -          | 11         |
| <b>3 Total Exports to CAN</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>476</b> | <b>531</b> | <b>587</b> | <b>454</b> | <b>465</b> |
| <b>Inland Southwest</b>       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 4 BPA-P to Other Entities     | 25         | 25         | 25         | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | 6          |
| <b>5 Total Exports to ISW</b> | <b>25</b>  | <b>25</b>  | <b>25</b>  | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>6</b>   |
| <b>Pacific Southwest</b>      |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 6 BPA-P to Other Entities     | 50         | 50         | 50         | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | 13         |
| 7 Intertie Losses             | 2          | 2          | 2          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | 0          |
| <b>8 Total Exports to PSW</b> | <b>52</b>  | <b>52</b>  | <b>52</b>  | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>-</b>   | <b>13</b>  |
| <b>Total Exports</b>          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 9 Federal Entities            | 531        | 531        | 531        | 454        | 454        | 454        | 454        | 454        | 454        | 454        | 476        | 531        | 587        | 454        | 484        |
| <b>10 Total Exports</b>       | <b>531</b> | <b>531</b> | <b>531</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>454</b> | <b>476</b> | <b>531</b> | <b>587</b> | <b>454</b> | <b>484</b> |

**Table 2.1.2**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                             | B              | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N              | O              | P                |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| HLH-MWh                       | Oct            | Nov            | Dec            | Jan            | Feb            | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Canada</b>                 |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| <b>Contracts</b>              |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 1 BPA-P to BCHP Trty CEA      | 337,999        | 327,550        | 337,999        | 337,999        | 316,193        | 337,545        | 163,548        | 163,548        | 337,999        | 327,096        | 337,999        | 169,000        | 169,000        | 327,096        | 3,990,571        |
| 2 BPA-P to BCHP NTSA          | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | 8,902          | 12,750         | 30,472         | -              | 52,125           |
| <b>3 Total Exports to CAN</b> | <b>337,999</b> | <b>327,550</b> | <b>337,999</b> | <b>337,999</b> | <b>316,193</b> | <b>337,545</b> | <b>163,548</b> | <b>163,548</b> | <b>337,999</b> | <b>327,096</b> | <b>346,902</b> | <b>181,750</b> | <b>199,472</b> | <b>327,096</b> | <b>4,042,696</b> |
| <b>Inland Southwest</b>       |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| <b>Contracts</b>              |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 4 BPA-P to Other Entities     | 10,800         | 10,000         | 10,000         | 10,400         | 10,000         | 10,400         | -              | -              | -              | -              | 10,400         | 5,200          | 5,200          | 10,000         | 92,400           |
| <b>5 Total Exports to ISW</b> | <b>10,800</b>  | <b>10,000</b>  | <b>10,000</b>  | <b>10,400</b>  | <b>10,000</b>  | <b>10,400</b>  | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>10,400</b>  | <b>5,200</b>   | <b>5,200</b>   | <b>10,000</b>  | <b>92,400</b>    |
| <b>Pacific Southwest</b>      |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| <b>Contracts</b>              |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 6 BPA-P to Other Entities     | 45,360         | 42,000         | 42,000         | 22,880         | 20,000         | 20,800         | 10,400         | 10,400         | 20,000         | 20,800         | 20,800         | 10,400         | 10,400         | 20,000         | 316,240          |
| 7 Intertie Losses             | 1,361          | 1,260          | 1,260          | 686            | 600            | 624            | 312            | 312            | 600            | 624            | 624            | 312            | 312            | 600            | 9,487            |
| <b>8 Total Exports to PSW</b> | <b>46,721</b>  | <b>43,260</b>  | <b>43,260</b>  | <b>23,566</b>  | <b>20,600</b>  | <b>21,424</b>  | <b>10,712</b>  | <b>10,712</b>  | <b>20,600</b>  | <b>21,424</b>  | <b>21,424</b>  | <b>10,712</b>  | <b>10,712</b>  | <b>20,600</b>  | <b>325,727</b>   |
| <b>Total Exports</b>          |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 9 Federal Entities            | 395,520        | 380,810        | 391,259        | 371,966        | 346,793        | 369,369        | 174,260        | 174,260        | 358,599        | 348,520        | 378,726        | 197,662        | 215,384        | 357,696        | 4,460,823        |
| <b>10 Total Exports</b>       | <b>395,520</b> | <b>380,810</b> | <b>391,259</b> | <b>371,966</b> | <b>346,793</b> | <b>369,369</b> | <b>174,260</b> | <b>174,260</b> | <b>358,599</b> | <b>348,520</b> | <b>378,726</b> | <b>197,662</b> | <b>215,384</b> | <b>357,696</b> | <b>4,460,823</b> |



**Table 2.1.2**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                             | B              | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N              | O              | P                |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| HLH-MWh                       | Oct            | Nov            | Dec            | Jan            | Feb            | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Canada</b>                 |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| <b>Contracts</b>              |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 1 BPA-P to BCHP Trty CEA      | 337,999        | 327,550        | 337,999        | 337,999        | 305,290        | 337,545        | 163,548        | 163,548        | 337,999        | 327,096        | 337,999        | 169,000        | 169,000        | 327,096        | 3,979,668        |
| 2 BPA-P to BCHP NTSA          | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | 8,902          | 11,770         | 32,816         | -              | 53,488           |
| <b>3 Total Exports to CAN</b> | <b>337,999</b> | <b>327,550</b> | <b>337,999</b> | <b>337,999</b> | <b>305,290</b> | <b>337,545</b> | <b>163,548</b> | <b>163,548</b> | <b>337,999</b> | <b>327,096</b> | <b>346,902</b> | <b>180,769</b> | <b>201,816</b> | <b>327,096</b> | <b>4,033,156</b> |
| <b>Inland Southwest</b>       |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| <b>Contracts</b>              |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 4 BPA-P to Other Entities     | 10,800         | 9,600          | 10,400         | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | 30,800           |
| <b>5 Total Exports to ISW</b> | <b>10,800</b>  | <b>9,600</b>   | <b>10,400</b>  | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>30,800</b>    |
| <b>Pacific Southwest</b>      |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| <b>Contracts</b>              |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 6 BPA-P to Other Entities     | 21,600         | 19,200         | 20,800         | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | 61,600           |
| 7 Intertie Losses             | 648            | 576            | 624            | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | -              | 1,848            |
| <b>8 Total Exports to PSW</b> | <b>22,248</b>  | <b>19,776</b>  | <b>21,424</b>  | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>-</b>       | <b>63,448</b>    |
| <b>Total Exports</b>          |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 9 Federal Entities            | 371,047        | 356,926        | 369,823        | 337,999        | 305,290        | 337,545        | 163,548        | 163,548        | 337,999        | 327,096        | 346,902        | 180,769        | 201,816        | 327,096        | 4,127,404        |
| <b>10 Total Exports</b>       | <b>371,047</b> | <b>356,926</b> | <b>369,823</b> | <b>337,999</b> | <b>305,290</b> | <b>337,545</b> | <b>163,548</b> | <b>163,548</b> | <b>337,999</b> | <b>327,096</b> | <b>346,902</b> | <b>180,769</b> | <b>201,816</b> | <b>327,096</b> | <b>4,127,404</b> |

**Table 2.1.3**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                             | B             | C             | D             | E             | F             | G             | H            | I            | J             | K             | L             | M             | N             | O             | P              |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| LLH-MWh                       | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1         | Apr16        | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           | Sum            |
| <b>Canada</b>                 |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| <b>Contracts</b>              |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| 1 BPA-P to BCHP Trty CEA      | -             | -             | -             | -             | -             | -             | -            | -            | -             | -             | -             | -             | -             | -             | -              |
| 2 BPA-P to BCHP NTSA          | -             | -             | -             | -             | -             | -             | -            | -            | -             | -             | 7,019         | 9,318         | 25,784        | -             | 42,121         |
| <b>3 Total Exports to CAN</b> | -             | -             | -             | -             | -             | -             | -            | -            | -             | -             | <b>7,019</b>  | <b>9,318</b>  | <b>25,784</b> | -             | <b>42,121</b>  |
| <b>Inland Southwest</b>       |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| <b>Contracts</b>              |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| 4 BPA-P to Other Entities     | -             | -             | -             | 8,200         | 7,400         | 8,175         | -            | -            | -             | -             | 8,200         | 3,800         | 4,400         | 8,000         | 48,175         |
| <b>5 Total Exports to ISW</b> | -             | -             | -             | <b>8,200</b>  | <b>7,400</b>  | <b>8,175</b>  | -            | -            | -             | -             | <b>8,200</b>  | <b>3,800</b>  | <b>4,400</b>  | <b>8,000</b>  | <b>48,175</b>  |
| <b>Pacific Southwest</b>      |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| <b>Contracts</b>              |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| 6 BPA-P to Other Entities     | 32,760        | 33,705        | 36,120        | 18,040        | 14,800        | 16,350        | 7,600        | 7,600        | 17,200        | 15,200        | 16,400        | 7,600         | 8,800         | 16,000        | 248,175        |
| 7 Intertie Losses             | 983           | 1,011         | 1,084         | 541           | 444           | 491           | 228          | 228          | 516           | 456           | 492           | 228           | 264           | 480           | 7,445          |
| <b>8 Total Exports to PSW</b> | <b>33,743</b> | <b>34,716</b> | <b>37,204</b> | <b>18,581</b> | <b>15,244</b> | <b>16,841</b> | <b>7,828</b> | <b>7,828</b> | <b>17,716</b> | <b>15,656</b> | <b>16,892</b> | <b>7,828</b>  | <b>9,064</b>  | <b>16,480</b> | <b>255,620</b> |
| <b>Total Exports</b>          |               |               |               |               |               |               |              |              |               |               |               |               |               |               |                |
| 9 Federal Entities            | 33,743        | 34,716        | 37,204        | 26,781        | 22,644        | 25,016        | 7,828        | 7,828        | 17,716        | 15,656        | 32,111        | 20,946        | 39,248        | 24,480        | 345,916        |
| <b>10 Total Exports</b>       | <b>33,743</b> | <b>34,716</b> | <b>37,204</b> | <b>26,781</b> | <b>22,644</b> | <b>25,016</b> | <b>7,828</b> | <b>7,828</b> | <b>17,716</b> | <b>15,656</b> | <b>32,111</b> | <b>20,946</b> | <b>39,248</b> | <b>24,480</b> | <b>345,916</b> |

**Table 2.1.3**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                             | B             | C             | D             | E        | F        | G        | H        | I        | J        | K        | L            | M             | N             | O        | P              |
|-------------------------------|---------------|---------------|---------------|----------|----------|----------|----------|----------|----------|----------|--------------|---------------|---------------|----------|----------------|
| LLH-MWh                       | Oct           | Nov           | Dec           | Jan      | Feb      | Mar      | Apr1     | Apr16    | May      | Jun      | Jul          | Aug1          | Aug16         | Sep      | Sum            |
| <b>Canada</b>                 |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| <b>Contracts</b>              |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| 1 BPA-P to BCHP Trty CEA      | -             | -             | -             | -        | -        | -        | -        | -        | -        | -        | -            | -             | -             | -        | -              |
| 2 BPA-P to BCHP NTSA          | -             | -             | -             | -        | -        | -        | -        | -        | -        | -        | 7,019        | 10,298        | 23,440        | -        | 40,758         |
| <b>3 Total Exports to CAN</b> | <b>-</b>      | <b>-</b>      | <b>-</b>      | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>7,019</b> | <b>10,298</b> | <b>23,440</b> | <b>-</b> | <b>40,758</b>  |
| <b>Inland Southwest</b>       |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| <b>Contracts</b>              |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| 4 BPA-P to Other Entities     | 7,800         | 8,425         | 8,200         | -        | -        | -        | -        | -        | -        | -        | -            | -             | -             | -        | 24,425         |
| <b>5 Total Exports to ISW</b> | <b>7,800</b>  | <b>8,425</b>  | <b>8,200</b>  | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b>     | <b>-</b>      | <b>-</b>      | <b>-</b> | <b>24,425</b>  |
| <b>Pacific Southwest</b>      |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| <b>Contracts</b>              |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| 6 BPA-P to Other Entities     | 15,600        | 16,850        | 16,400        | -        | -        | -        | -        | -        | -        | -        | -            | -             | -             | -        | 48,850         |
| 7 Intertie Losses             | 468           | 506           | 492           | -        | -        | -        | -        | -        | -        | -        | -            | -             | -             | -        | 1,466          |
| <b>8 Total Exports to PSW</b> | <b>16,068</b> | <b>17,356</b> | <b>16,892</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b>     | <b>-</b>      | <b>-</b>      | <b>-</b> | <b>50,316</b>  |
| <b>Total Exports</b>          |               |               |               |          |          |          |          |          |          |          |              |               |               |          |                |
| 9 Federal Entities            | 23,868        | 25,781        | 25,092        | -        | -        | -        | -        | -        | -        | -        | 7,019        | 10,298        | 23,440        | -        | 115,498        |
| <b>10 Total Exports</b>       | <b>23,868</b> | <b>25,781</b> | <b>25,092</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>7,019</b> | <b>10,298</b> | <b>23,440</b> | <b>-</b> | <b>115,498</b> |

**Table 2.2.1**  
**Bonneville Power Administration - Power Services: Imports**  
**Fiscal Year 2020**  
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| A                                  | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           | P           |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                         | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Canada</b>                      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| <b>Contracts</b>                   |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 BCHP to BPA-P Trty LCALgcy       | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        |
| <b>2 Total Imports From CAN</b>    | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> |
| <b>Pacific Southwest</b>           |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| <b>Contracts</b>                   |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 3 Other Entities to Other Entities | 115         | 114         | 113         | 114         | 114         | 114         | 64.4        | 64.4        | 63.4        | 64.4        | 64.0        | 64.4        | 63.5        | 63.9        | 89.0        |
| <b>4 Total Imports From PSW</b>    | <b>115</b>  | <b>114</b>  | <b>113</b>  | <b>114</b>  | <b>114</b>  | <b>114</b>  | <b>64.4</b> | <b>64.4</b> | <b>63.4</b> | <b>64.4</b> | <b>64.0</b> | <b>64.4</b> | <b>63.5</b> | <b>63.9</b> | <b>89.0</b> |
| <b>Total Imports</b>               |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 5 Federal Entities                 | 116         | 115         | 114         | 115         | 115         | 115         | 65.4        | 65.4        | 64.4        | 65.4        | 65.0        | 65.4        | 64.5        | 64.9        | 90.0        |
| <b>6 Total Imports</b>             | <b>116</b>  | <b>115</b>  | <b>114</b>  | <b>115</b>  | <b>115</b>  | <b>115</b>  | <b>65.4</b> | <b>65.4</b> | <b>64.4</b> | <b>65.4</b> | <b>65.0</b> | <b>65.4</b> | <b>64.5</b> | <b>64.9</b> | <b>90.0</b> |

**Table 2.2.1**  
**Bonneville Power Administration - Power Services: Imports**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                  | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           | P           |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                         | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Canada</b>                      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| <b>Contracts</b>                   |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 BCHP to BPA-P Trty LCALgcy       | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        | 1.00        |
| <b>2 Total Imports From CAN</b>    | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> |
| <b>Pacific Southwest</b>           |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| <b>Contracts</b>                   |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 3 Other Entities to Other Entities | 115         | 113         | 114         | 113         | 114         | 115         | 64.4        | 64.4        | 63.4        | 64.4        | 0           | 0           | 0           | 0           | 72.8        |
| <b>4 Total Imports From PSW</b>    | <b>115</b>  | <b>113</b>  | <b>114</b>  | <b>113</b>  | <b>114</b>  | <b>115</b>  | <b>64.4</b> | <b>64.4</b> | <b>63.4</b> | <b>64.4</b> |             |             |             |             | <b>72.8</b> |
| <b>Total Imports</b>               |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 5 Federal Entities                 | 116         | 114         | 115         | 114         | 115         | 116         | 65.4        | 65.4        | 64.4        | 65.4        | 1.00        | 1.00        | 1.00        | 1.00        | 73.8        |
| <b>6 Total Imports</b>             | <b>116</b>  | <b>114</b>  | <b>115</b>  | <b>114</b>  | <b>115</b>  | <b>116</b>  | <b>65.4</b> | <b>65.4</b> | <b>64.4</b> | <b>65.4</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>1.00</b> | <b>73.8</b> |

**Table 2.2.2**  
**Bonneville Power Administration - Power Services: Imports**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                  | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M             | N             | O             | P              |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| HLH-MWh                            | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           | Sum            |
| <b>Canada</b>                      |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 1 BChP to BPA-P Trty LCALgcy       | 432           | 400           | 400           | 416           | 400           | 416           | 208           | 208           | 400           | 416           | 416           | 208           | 208           | 400           | 4,928          |
| <b>2 Total Imports From CAN</b>    | <b>432</b>    | <b>400</b>    | <b>400</b>    | <b>416</b>    | <b>400</b>    | <b>416</b>    | <b>208</b>    | <b>208</b>    | <b>400</b>    | <b>416</b>    | <b>416</b>    | <b>208</b>    | <b>208</b>    | <b>400</b>    | <b>4,928</b>   |
| <b>Pacific Southwest</b>           |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 3 Other Entities to Other Entities | 54,000        | 50,000        | 50,000        | 52,000        | 50,000        | 52,000        | 15,600        | 15,600        | 30,000        | 31,200        | 31,200        | 15,600        | 15,600        | 30,000        | 492,800        |
| <b>4 Total Imports From PSW</b>    | <b>54,000</b> | <b>50,000</b> | <b>50,000</b> | <b>52,000</b> | <b>50,000</b> | <b>52,000</b> | <b>15,600</b> | <b>15,600</b> | <b>30,000</b> | <b>31,200</b> | <b>31,200</b> | <b>15,600</b> | <b>15,600</b> | <b>30,000</b> | <b>492,800</b> |
| <b>Total Imports</b>               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 5 Federal Entities                 | 54,432        | 50,400        | 50,400        | 52,416        | 50,400        | 52,416        | 15,808        | 15,808        | 30,400        | 31,616        | 31,616        | 15,808        | 15,808        | 30,400        | 497,728        |
| <b>6 Total Imports</b>             | <b>54,432</b> | <b>50,400</b> | <b>50,400</b> | <b>52,416</b> | <b>50,400</b> | <b>52,416</b> | <b>15,808</b> | <b>15,808</b> | <b>30,400</b> | <b>31,616</b> | <b>31,616</b> | <b>15,808</b> | <b>15,808</b> | <b>30,400</b> | <b>497,728</b> |

**Table 2.2.2**  
**Bonneville Power Administration - Power Services: Imports**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                  | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L          | M          | N          | O          | P              |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|------------|------------|------------|----------------|
| HLH-MWh                            | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul        | Aug1       | Aug16      | Sep        | Sum            |
| <b>Canada</b>                      |               |               |               |               |               |               |               |               |               |               |            |            |            |            |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |               |               |               |               |            |            |            |            |                |
| 1 BCHP to BPA-P Trty LCALgcy       | 432           | 384           | 416           | 400           | 384           | 432           | 208           | 208           | 400           | 416           | 416        | 192        | 224        | 400        | 4,912          |
| <b>2 Total Imports From CAN</b>    | <b>432</b>    | <b>384</b>    | <b>416</b>    | <b>400</b>    | <b>384</b>    | <b>432</b>    | <b>208</b>    | <b>208</b>    | <b>400</b>    | <b>416</b>    | <b>416</b> | <b>192</b> | <b>224</b> | <b>400</b> | <b>4,912</b>   |
| <b>Pacific Southwest</b>           |               |               |               |               |               |               |               |               |               |               |            |            |            |            |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |               |               |               |               |            |            |            |            |                |
| 3 Other Entities to Other Entities | 54,000        | 48,000        | 52,000        | 50,000        | 48,000        | 54,000        | 15,600        | 15,600        | 30,000        | 31,200        | -          | -          | -          | -          | 398,400        |
| <b>4 Total Imports From PSW</b>    | <b>54,000</b> | <b>48,000</b> | <b>52,000</b> | <b>50,000</b> | <b>48,000</b> | <b>54,000</b> | <b>15,600</b> | <b>15,600</b> | <b>30,000</b> | <b>31,200</b> |            |            |            |            | <b>398,400</b> |
| <b>Total Imports</b>               |               |               |               |               |               |               |               |               |               |               |            |            |            |            |                |
| 5 Federal Entities                 | 54,432        | 48,384        | 52,416        | 50,400        | 48,384        | 54,432        | 15,808        | 15,808        | 30,400        | 31,616        | 416        | 192        | 224        | 400        | 403,312        |
| <b>6 Total Imports</b>             | <b>54,432</b> | <b>48,384</b> | <b>52,416</b> | <b>50,400</b> | <b>48,384</b> | <b>54,432</b> | <b>15,808</b> | <b>15,808</b> | <b>30,400</b> | <b>31,616</b> | <b>416</b> | <b>192</b> | <b>224</b> | <b>400</b> | <b>403,312</b> |

**Table 2.2.3**  
**Bonneville Power Administration - Power Services: Imports**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                  | B             | C             | D             | E             | F             | G             | H            | I            | J             | K             | L             | M            | N            | O             | P              |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|---------------|--------------|--------------|---------------|----------------|
| LLH-MWh                            | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1         | Apr16        | May           | Jun           | Jul           | Aug1         | Aug16        | Sep           | Sum            |
| <b>Canada</b>                      |               |               |               |               |               |               |              |              |               |               |               |              |              |               |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |              |              |               |               |               |              |              |               |                |
| 1 BChP to BPA-P Trty LCALgcy       | 312           | 321           | 344           | 328           | 296           | 327           | 152          | 152          | 344           | 304           | 328           | 152          | 176          | 320           | 3,856          |
| <b>2 Total Imports From CAN</b>    | <b>312</b>    | <b>321</b>    | <b>344</b>    | <b>328</b>    | <b>296</b>    | <b>327</b>    | <b>152</b>   | <b>152</b>   | <b>344</b>    | <b>304</b>    | <b>328</b>    | <b>152</b>   | <b>176</b>   | <b>320</b>    | <b>3,856</b>   |
| <b>Pacific Southwest</b>           |               |               |               |               |               |               |              |              |               |               |               |              |              |               |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |              |              |               |               |               |              |              |               |                |
| 3 Other Entities to Other Entities | 31,200        | 32,100        | 34,400        | 32,800        | 29,600        | 32,700        | 7,600        | 7,600        | 17,200        | 15,200        | 16,400        | 7,600        | 8,800        | 16,000        | 289,200        |
| <b>4 Total Imports From PSW</b>    | <b>31,200</b> | <b>32,100</b> | <b>34,400</b> | <b>32,800</b> | <b>29,600</b> | <b>32,700</b> | <b>7,600</b> | <b>7,600</b> | <b>17,200</b> | <b>15,200</b> | <b>16,400</b> | <b>7,600</b> | <b>8,800</b> | <b>16,000</b> | <b>289,200</b> |
| <b>Total Imports</b>               |               |               |               |               |               |               |              |              |               |               |               |              |              |               |                |
| 5 Federal Entities                 | 31,512        | 32,421        | 34,744        | 33,128        | 29,896        | 33,027        | 7,752        | 7,752        | 17,544        | 15,504        | 16,728        | 7,752        | 8,976        | 16,320        | 293,056        |
| <b>6 Total Imports</b>             | <b>31,512</b> | <b>32,421</b> | <b>34,744</b> | <b>33,128</b> | <b>29,896</b> | <b>33,027</b> | <b>7,752</b> | <b>7,752</b> | <b>17,544</b> | <b>15,504</b> | <b>16,728</b> | <b>7,752</b> | <b>8,976</b> | <b>16,320</b> | <b>293,056</b> |



**Table 2.2.3**  
**Bonneville Power Administration - Power Services: Imports**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                  | B             | C             | D             | E             | F             | G             | H            | I            | J             | K             | L          | M          | N          | O          | P              |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|------------|------------|------------|------------|----------------|
| LLH-MWh                            | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1         | Apr16        | May           | Jun           | Jul        | Aug1       | Aug16      | Sep        | Sum            |
| <b>Canada</b>                      |               |               |               |               |               |               |              |              |               |               |            |            |            |            |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |              |              |               |               |            |            |            |            |                |
| 1 BCHP to BPA-P Trty LCALgcy       | 312           | 337           | 328           | 344           | 288           | 311           | 152          | 152          | 344           | 304           | 328        | 168        | 160        | 320        | 3,848          |
| <b>2 Total Imports From CAN</b>    | <b>312</b>    | <b>337</b>    | <b>328</b>    | <b>344</b>    | <b>288</b>    | <b>311</b>    | <b>152</b>   | <b>152</b>   | <b>344</b>    | <b>304</b>    | <b>328</b> | <b>168</b> | <b>160</b> | <b>320</b> | <b>3,848</b>   |
| <b>Pacific Southwest</b>           |               |               |               |               |               |               |              |              |               |               |            |            |            |            |                |
| <b>Contracts</b>                   |               |               |               |               |               |               |              |              |               |               |            |            |            |            |                |
| 3 Other Entities to Other Entities | 31,200        | 33,700        | 32,800        | 34,400        | 28,800        | 31,100        | 7,600        | 7,600        | 17,200        | 15,200        | -          | -          | -          | -          | 239,600        |
| <b>4 Total Imports From PSW</b>    | <b>31,200</b> | <b>33,700</b> | <b>32,800</b> | <b>34,400</b> | <b>28,800</b> | <b>31,100</b> | <b>7,600</b> | <b>7,600</b> | <b>17,200</b> | <b>15,200</b> |            |            |            |            | <b>239,600</b> |
| <b>Total Imports</b>               |               |               |               |               |               |               |              |              |               |               |            |            |            |            |                |
| 5 Federal Entities                 | 31,512        | 34,037        | 33,128        | 34,744        | 29,088        | 31,411        | 7,752        | 7,752        | 17,544        | 15,504        | 328        | 168        | 160        | 320        | 243,448        |
| <b>6 Total Imports</b>             | <b>31,512</b> | <b>34,037</b> | <b>33,128</b> | <b>34,744</b> | <b>29,088</b> | <b>31,411</b> | <b>7,752</b> | <b>7,752</b> | <b>17,544</b> | <b>15,504</b> | <b>328</b> | <b>168</b> | <b>160</b> | <b>320</b> | <b>243,448</b> |

**Table 2.3.1**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                       | B          | C          | D          | E           | F           | G           | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|---|------------|------------|------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                              | Oct        | Nov        | Dec        | Jan         | Feb         | Mar         | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Intra-Regional Transfers</b>         |            |            |            |             |             |             |            |            |            |            |            |            |            |            |            |
| <b>Contracts</b>                        | <b>144</b> | <b>147</b> | <b>145</b> | <b>80.1</b> | <b>79.2</b> | <b>77.3</b> | <b>109</b> | <b>109</b> | <b>108</b> | <b>110</b> | <b>110</b> | <b>108</b> | <b>107</b> | <b>107</b> | <b>111</b> |
| 1 BPA-P to AVWP Setl WNP3 Del           | 0          | 0          | 0          | 0           | 0           | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          |
| 2 BPA-P to BPA-T Ops IntrlAgmt          | 9.44       | 9.44       | 9.44       | 9.44        | 9.44        | 9.44        | 9.44       | 9.44       | 9.44       | 9.44       | 9.44       | 9.44       | 9.44       | 9.44       | 9.44       |
| 3 BPA-P to Other Entities               | 125        | 125        | 125        | 61.0        | 60.6        | 61.0        | 60.6       | 60.6       | 61.6       | 60.6       | 61.0       | 60.6       | 61.5       | 61.1       | 77.1       |
| 4 BPA-P to PPL NSP RIn                  | 4.42       | 5.27       | 3.68       | 3.24        | 2.68        | 2.25        | 4.73       | 4.73       | 5.05       | 4.97       | 6.35       | 5.37       | 5.36       | 4.28       | 4.36       |
| 5 BPA-P to PSE Ops UBkr Repl            | 0          | 3.89       | 3.77       | 3.92        | 4.03        | 0           | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 1.29       |
| 6 Other Entities to BPA-P               | 0          | 0          | 0          | 0           | 0           | 0           | 28.9       | 28.9       | 26.9       | 28.9       | 28.0       | 28.9       | 27.1       | 27.8       | 14.0       |
| 7 PPL to BPA-P NSP SOut                 | 5.11       | 3.80       | 3.24       | 2.50        | 2.40        | 4.58        | 5.22       | 5.22       | 4.81       | 6.56       | 5.37       | 4.12       | 4.15       | 4.56       | 4.36       |
| <b>8 Total Intra-Regional Transfers</b> | <b>144</b> | <b>147</b> | <b>145</b> | <b>80.1</b> | <b>79.2</b> | <b>77.3</b> | <b>109</b> | <b>109</b> | <b>108</b> | <b>110</b> | <b>110</b> | <b>108</b> | <b>107</b> | <b>107</b> | <b>111</b> |
| <b>Intra-Regional Contracts Out</b>     |            |            |            |             |             |             |            |            |            |            |            |            |            |            |            |
| 9 Federal Entities                      | 139        | 144        | 142        | 77.6        | 76.8        | 72.7        | 74.7       | 74.7       | 76.0       | 75.0       | 76.8       | 75.4       | 76.3       | 74.8       | 92.1       |
| 10 Investor Owned Utilities             | 5.11       | 3.80       | 3.24       | 2.50        | 2.40        | 4.58        | 5.22       | 5.22       | 4.81       | 6.56       | 5.37       | 4.12       | 4.15       | 4.56       | 4.36       |
| 11 Marketer                             | 0          | 0          | 0          | 0           | 0           | 0           | 28.9       | 28.9       | 26.9       | 28.9       | 28.0       | 28.9       | 27.1       | 27.8       | 14.0       |
| <b>12 Total Regional Contracts Out</b>  | <b>144</b> | <b>147</b> | <b>145</b> | <b>80.1</b> | <b>79.2</b> | <b>77.3</b> | <b>109</b> | <b>109</b> | <b>108</b> | <b>110</b> | <b>110</b> | <b>108</b> | <b>107</b> | <b>107</b> | <b>111</b> |
| <b>Intra-Regional Contracts In</b>      |            |            |            |             |             |             |            |            |            |            |            |            |            |            |            |
| 13 Federal Entities                     | 14.5       | 13.2       | 12.7       | 11.9        | 11.8        | 14.0        | 43.5       | 43.5       | 41.1       | 44.9       | 42.8       | 42.4       | 40.7       | 41.8       | 27.8       |
| 14 Investor Owned Utilities             | 4.42       | 9.17       | 7.46       | 7.16        | 6.71        | 2.25        | 4.73       | 4.73       | 5.05       | 4.97       | 6.35       | 5.37       | 5.36       | 4.28       | 5.65       |
| 15 Marketer                             | 125        | 125        | 125        | 61.0        | 60.6        | 61.0        | 60.6       | 60.6       | 61.6       | 60.6       | 61.0       | 60.6       | 61.5       | 61.1       | 77.1       |
| <b>16 Total Regional Contracts In</b>   | <b>144</b> | <b>147</b> | <b>145</b> | <b>80.1</b> | <b>79.2</b> | <b>77.3</b> | <b>109</b> | <b>109</b> | <b>108</b> | <b>110</b> | <b>110</b> | <b>108</b> | <b>107</b> | <b>107</b> | <b>111</b> |

**Table 2.3.1**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                       | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           | P           |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                              | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Intra-Regional Transfers</b>         |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| <b>Contracts</b>                        | <b>74.3</b> | <b>74.9</b> | <b>74.4</b> | <b>13.2</b> | <b>13.4</b> | <b>9.44</b> | <b>38.3</b> | <b>38.3</b> | <b>36.3</b> | <b>38.3</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>33.5</b> |
| 1 BPA-P to AVWP Setl WNP3 Del           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 2 BPA-P to BPA-T Ops IntrlAgmt          | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        |
| 3 BPA-P to Other Entities               | 60.5        | 61.7        | 61.0        | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 15.4        |
| 4 BPA-P to PPL NSP RIn                  | 4.41        | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0.37        |
| 5 BPA-P to PSE Ops UBkr Repl            | 0           | 3.74        | 3.92        | 3.77        | 4.01        | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 1.27        |
| 6 Other Entities to BPA-P               | 0           | 0           | 0           | 0           | 0           | 0           | 28.9        | 28.9        | 26.9        | 28.9        | 0           | 0           | 0           | 0           | 7.03        |
| 7 PPL to BPA-P NSP SOut                 | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| <b>8 Total Intra-Regional Transfers</b> | <b>74.3</b> | <b>74.9</b> | <b>74.4</b> | <b>13.2</b> | <b>13.4</b> | <b>9.44</b> | <b>38.3</b> | <b>38.3</b> | <b>36.3</b> | <b>38.3</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>33.5</b> |
| <b>Intra-Regional Contracts Out</b>     |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 9 Federal Entities                      | 74.3        | 74.9        | 74.4        | 13.2        | 13.4        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 26.5        |
| 10 Investor Owned Utilities             | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 11 Marketer                             | 0           | 0           | 0           | 0           | 0           | 0           | 28.9        | 28.9        | 26.9        | 28.9        |             |             |             |             | 7.03        |
| <b>12 Total Regional Contracts Out</b>  | <b>74.3</b> | <b>74.9</b> | <b>74.4</b> | <b>13.2</b> | <b>13.4</b> | <b>9.44</b> | <b>38.3</b> | <b>38.3</b> | <b>36.3</b> | <b>38.3</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>33.5</b> |
| <b>Intra-Regional Contracts In</b>      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 13 Federal Entities                     | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 9.44        | 38.3        | 38.3        | 36.3        | 38.3        | 9.44        | 9.44        | 9.44        | 9.44        | 16.5        |
| 14 Investor Owned Utilities             | 4.41        | 3.74        | 3.92        | 3.77        | 4.01        | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 1.64        |
| 15 Marketer                             | 60.5        | 61.7        | 61.0        |             |             |             |             |             |             |             |             |             |             |             | 15.4        |
| <b>16 Total Regional Contracts In</b>   | <b>74.3</b> | <b>74.9</b> | <b>74.4</b> | <b>13.2</b> | <b>13.4</b> | <b>9.44</b> | <b>38.3</b> | <b>38.3</b> | <b>36.3</b> | <b>38.3</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>9.44</b> | <b>33.5</b> |

**Table 2.3.2**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                       | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M             | N             | O             | P              |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| HLH-MWh                                 | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           | Sum            |
| <b>Intra-Regional Transfers</b>         |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| <b>Contracts</b>                        | <b>62,036</b> | <b>60,052</b> | <b>59,175</b> | <b>30,084</b> | <b>28,621</b> | <b>27,562</b> | <b>24,864</b> | <b>24,864</b> | <b>47,700</b> | <b>49,992</b> | <b>50,560</b> | <b>24,687</b> | <b>24,687</b> | <b>47,175</b> | <b>562,058</b> |
| 1 BPA-P to AVWP Setl WNP3 Del           | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -              |
| 2 BPA-P to BPA-T Ops IntrAgmt           | 4,077         | 3,775         | 3,775         | 3,926         | 3,775         | 3,926         | 1,963         | 1,963         | 3,775         | 3,926         | 3,926         | 1,963         | 1,963         | 3,775         | 46,506         |
| 3 BPA-P to Other Entities               | 54,000        | 50,000        | 50,000        | 20,800        | 20,000        | 20,800        | 10,400        | 10,400        | 20,000        | 20,800        | 20,800        | 10,400        | 10,400        | 20,000        | 338,800        |
| 4 BPA-P to PPL NSP RIn                  | 1,843         | 2,117         | 1,360         | 1,240         | 1,206         | 840           | 998           | 998           | 2,205         | 1,720         | 2,746         | 1,144         | 1,144         | 1,560         | 21,122         |
| 5 BPA-P to PSE Ops UBkr Repl            | -             | 2,800         | 2,800         | 2,912         | 2,800         | -             | -             | -             | -             | -             | -             | -             | -             | -             | 11,312         |
| 6 Other Entities to BPA-P               | -             | -             | -             | -             | -             | -             | 10,400        | 10,400        | 20,000        | 20,800        | 20,800        | 10,400        | 10,400        | 20,000        | 123,200        |
| 7 PPL to BPA-P NSP SOut                 | 2,117         | 1,360         | 1,240         | 1,206         | 840           | 1,997         | 1,102         | 1,102         | 1,720         | 2,746         | 2,288         | 780           | 780           | 1,840         | 21,118         |
| <b>8 Total Intra-Regional Transfers</b> | <b>62,036</b> | <b>60,052</b> | <b>59,175</b> | <b>30,084</b> | <b>28,621</b> | <b>27,562</b> | <b>24,864</b> | <b>24,864</b> | <b>47,700</b> | <b>49,992</b> | <b>50,560</b> | <b>24,687</b> | <b>24,687</b> | <b>47,175</b> | <b>562,058</b> |
| <b>Intra-Regional Contracts Out</b>     |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 9 Federal Entities                      | 59,920        | 58,692        | 57,935        | 28,878        | 27,781        | 25,566        | 13,361        | 13,361        | 25,980        | 26,446        | 27,472        | 13,507        | 13,507        | 25,335        | 417,739        |
| 10 Investor Owned Utilities             | 2,117         | 1,360         | 1,240         | 1,206         | 840           | 1,997         | 1,102         | 1,102         | 1,720         | 2,746         | 2,288         | 780           | 780           | 1,840         | 21,118         |
| 11 Marketer                             | -             | -             | -             | -             | -             | -             | 10,400        | 10,400        | 20,000        | 20,800        | 20,800        | 10,400        | 10,400        | 20,000        | 123,200        |
| <b>12 Total Regional Contracts Out</b>  | <b>62,036</b> | <b>60,052</b> | <b>59,175</b> | <b>30,084</b> | <b>28,621</b> | <b>27,562</b> | <b>24,864</b> | <b>24,864</b> | <b>47,700</b> | <b>49,992</b> | <b>50,560</b> | <b>24,687</b> | <b>24,687</b> | <b>47,175</b> | <b>562,058</b> |
| <b>Intra-Regional Contracts In</b>      |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 13 Federal Entities                     | 6,194         | 5,135         | 5,015         | 5,132         | 4,615         | 5,923         | 13,465        | 13,465        | 25,495        | 27,472        | 27,014        | 13,143        | 13,143        | 25,615        | 190,824        |
| 14 Investor Owned Utilities             | 1,843         | 4,917         | 4,160         | 4,152         | 4,006         | 840           | 998           | 998           | 2,205         | 1,720         | 2,746         | 1,144         | 1,144         | 1,560         | 32,434         |
| 15 Marketer                             | 54,000        | 50,000        | 50,000        | 20,800        | 20,000        | 20,800        | 10,400        | 10,400        | 20,000        | 20,800        | 20,800        | 10,400        | 10,400        | 20,000        | 338,800        |
| <b>16 Total Regional Contracts In</b>   | <b>62,036</b> | <b>60,052</b> | <b>59,175</b> | <b>30,084</b> | <b>28,621</b> | <b>27,562</b> | <b>24,864</b> | <b>24,864</b> | <b>47,700</b> | <b>49,992</b> | <b>50,560</b> | <b>24,687</b> | <b>24,687</b> | <b>47,175</b> | <b>562,058</b> |

**Table 2.3.2**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                       | B             | C             | D             | E            | F            | G            | H             | I             | J             | K             | L            | M            | N            | O            | P              |
|---|---------------|---------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|----------------|
| HLH-MWh                                 | Oct           | Nov           | Dec           | Jan          | Feb          | Mar          | Apr1          | Apr16         | May           | Jun           | Jul          | Aug1         | Aug16        | Sep          | Sum            |
| <b>Intra-Regional Transfers</b>         |               |               |               |              |              |              |               |               |               |               |              |              |              |              |                |
| <b>Contracts</b>                        | <b>27,517</b> | <b>25,512</b> | <b>27,638</b> | <b>6,575</b> | <b>6,312</b> | <b>4,077</b> | <b>12,363</b> | <b>12,363</b> | <b>23,775</b> | <b>24,726</b> | <b>3,926</b> | <b>1,812</b> | <b>2,114</b> | <b>3,775</b> | <b>182,483</b> |
| 1 BPA-P to AVWP Setl WNP3 Del           | -             | -             | -             | -            | -            | -            | -             | -             | -             | -             | -            | -            | -            | -            | -              |
| 2 BPA-P to BPA-T Ops IntrlAgmt          | 4,077         | 3,624         | 3,926         | 3,775        | 3,624        | 4,077        | 1,963         | 1,963         | 3,775         | 3,926         | 3,926        | 1,812        | 2,114        | 3,775        | 46,355         |
| 3 BPA-P to Other Entities               | 21,600        | 19,200        | 20,800        | -            | -            | -            | -             | -             | -             | -             | -            | -            | -            | -            | 61,600         |
| 4 BPA-P to PPL NSP RIn                  | 1,840         | -             | -             | -            | -            | -            | -             | -             | -             | -             | -            | -            | -            | -            | 1,840          |
| 5 BPA-P to PSE Ops UBkr Repl            | -             | 2,688         | 2,912         | 2,800        | 2,688        | -            | -             | -             | -             | -             | -            | -            | -            | -            | 11,088         |
| 6 Other Entities to BPA-P               | -             | -             | -             | -            | -            | -            | 10,400        | 10,400        | 20,000        | 20,800        | -            | -            | -            | -            | 61,600         |
| 7 PPL to BPA-P NSP SOut                 | -             | -             | -             | -            | -            | -            | -             | -             | -             | -             | -            | -            | -            | -            | -              |
| <b>8 Total Intra-Regional Transfers</b> | <b>27,517</b> | <b>25,512</b> | <b>27,638</b> | <b>6,575</b> | <b>6,312</b> | <b>4,077</b> | <b>12,363</b> | <b>12,363</b> | <b>23,775</b> | <b>24,726</b> | <b>3,926</b> | <b>1,812</b> | <b>2,114</b> | <b>3,775</b> | <b>182,483</b> |
| <b>Intra-Regional Contracts Out</b>     |               |               |               |              |              |              |               |               |               |               |              |              |              |              |                |
| 9 Federal Entities                      | 27,517        | 25,512        | 27,638        | 6,575        | 6,312        | 4,077        | 1,963         | 1,963         | 3,775         | 3,926         | 3,926        | 1,812        | 2,114        | 3,775        | 120,882        |
| 10 Investor Owned Utilities             | -             | -             | -             | -            | -            | -            | -             | -             | -             | -             | -            | -            | -            | -            | -              |
| 11 Marketer                             | -             | -             | -             | -            | -            | -            | 10,400        | 10,400        | 20,000        | 20,800        | -            | -            | -            | -            | 61,600         |
| <b>12 Total Regional Contracts Out</b>  | <b>27,517</b> | <b>25,512</b> | <b>27,638</b> | <b>6,575</b> | <b>6,312</b> | <b>4,077</b> | <b>12,363</b> | <b>12,363</b> | <b>23,775</b> | <b>24,726</b> | <b>3,926</b> | <b>1,812</b> | <b>2,114</b> | <b>3,775</b> | <b>182,483</b> |
| <b>Intra-Regional Contracts In</b>      |               |               |               |              |              |              |               |               |               |               |              |              |              |              |                |
| 13 Federal Entities                     | 4,077         | 3,624         | 3,926         | 3,775        | 3,624        | 4,077        | 12,363        | 12,363        | 23,775        | 24,726        | 3,926        | 1,812        | 2,114        | 3,775        | 107,955        |
| 14 Investor Owned Utilities             | 1,840         | 2,688         | 2,912         | 2,800        | 2,688        | -            | -             | -             | -             | -             | -            | -            | -            | -            | 12,928         |
| 15 Marketer                             | 21,600        | 19,200        | 20,800        | -            | -            | -            | -             | -             | -             | -             | -            | -            | -            | -            | 61,600         |
| <b>16 Total Regional Contracts In</b>   | <b>27,517</b> | <b>25,512</b> | <b>27,638</b> | <b>6,575</b> | <b>6,312</b> | <b>4,077</b> | <b>12,363</b> | <b>12,363</b> | <b>23,775</b> | <b>24,726</b> | <b>3,926</b> | <b>1,812</b> | <b>2,114</b> | <b>3,775</b> | <b>182,483</b> |

**Table 2.3.3**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                       | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M             | N             | O             | P              |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| LLH-MWh                                 | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           | Sum            |
| <b>Intra-Regional Transfers</b>         |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| <b>Contracts</b>                        | <b>45,074</b> | <b>46,226</b> | <b>48,803</b> | <b>29,528</b> | <b>26,485</b> | <b>29,846</b> | <b>14,312</b> | <b>14,312</b> | <b>32,454</b> | <b>29,503</b> | <b>31,377</b> | <b>14,328</b> | <b>16,591</b> | <b>29,978</b> | <b>408,820</b> |
| 1 BPA-P to AVWP Setl WNP3 Del           | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -              |
| 2 BPA-P to BPA-T Ops IntrlAgmt          | 2,944         | 3,029         | 3,246         | 3,095         | 2,793         | 3,086         | 1,434         | 1,434         | 3,246         | 2,869         | 3,095         | 1,434         | 1,661         | 3,020         | 36,389         |
| 3 BPA-P to Other Entities               | 39,000        | 40,125        | 43,000        | 24,600        | 22,200        | 24,525        | 11,400        | 11,400        | 25,800        | 22,800        | 24,600        | 11,400        | 13,200        | 24,000        | 338,050        |
| 4 BPA-P to PPL NSP RIn                  | 1,445         | 1,685         | 1,380         | 1,170         | 656           | 829           | 703           | 703           | 1,550         | 1,858         | 1,976         | 791           | 915           | 1,518         | 17,179         |
| 5 BPA-P to PSE Ops UBkr Repl            | -             | 7             | 7             | 7             | 7             | -             | -             | -             | -             | -             | -             | -             | -             | -             | 28             |
| 6 Other Entities to BPA-P               | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -              |
| 7 PPL to BPA-P NSP SOut                 | 1,685         | 1,380         | 1,170         | 656           | 829           | 1,406         | 775           | 775           | 1,858         | 1,976         | 1,706         | 703           | 815           | 1,440         | 17,174         |
| <b>8 Total Intra-Regional Transfers</b> | <b>45,074</b> | <b>46,226</b> | <b>48,803</b> | <b>29,528</b> | <b>26,485</b> | <b>29,846</b> | <b>14,312</b> | <b>14,312</b> | <b>32,454</b> | <b>29,503</b> | <b>31,377</b> | <b>14,328</b> | <b>16,591</b> | <b>29,978</b> | <b>408,820</b> |
| <b>Intra-Regional Contracts Out</b>     |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 9 Federal Entities                      | 43,389        | 44,846        | 47,633        | 28,872        | 25,656        | 28,440        | 13,537        | 13,537        | 30,596        | 27,527        | 29,671        | 13,625        | 15,776        | 28,538        | 391,646        |
| 10 Investor Owned Utilities             | 1,685         | 1,380         | 1,170         | 656           | 829           | 1,406         | 775           | 775           | 1,858         | 1,976         | 1,706         | 703           | 815           | 1,440         | 17,174         |
| 11 Marketer                             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -              |
| <b>12 Total Regional Contracts Out</b>  | <b>45,074</b> | <b>46,226</b> | <b>48,803</b> | <b>29,528</b> | <b>26,485</b> | <b>29,846</b> | <b>14,312</b> | <b>14,312</b> | <b>32,454</b> | <b>29,503</b> | <b>31,377</b> | <b>14,328</b> | <b>16,591</b> | <b>29,978</b> | <b>408,820</b> |
| <b>Intra-Regional Contracts In</b>      |               |               |               |               |               |               |               |               |               |               |               |               |               |               |                |
| 13 Federal Entities                     | 4,629         | 4,409         | 4,416         | 3,751         | 3,622         | 4,492         | 2,209         | 2,209         | 5,104         | 4,845         | 4,801         | 2,138         | 2,475         | 4,460         | 53,563         |
| 14 Investor Owned Utilities             | 1,445         | 1,692         | 1,387         | 1,177         | 663           | 829           | 703           | 703           | 1,550         | 1,858         | 1,976         | 791           | 915           | 1,518         | 17,207         |
| 15 Marketer                             | 39,000        | 40,125        | 43,000        | 24,600        | 22,200        | 24,525        | 11,400        | 11,400        | 25,800        | 22,800        | 24,600        | 11,400        | 13,200        | 24,000        | 338,050        |
| <b>16 Total Regional Contracts In</b>   | <b>45,074</b> | <b>46,226</b> | <b>48,803</b> | <b>29,528</b> | <b>26,485</b> | <b>29,846</b> | <b>14,312</b> | <b>14,312</b> | <b>32,454</b> | <b>29,503</b> | <b>31,377</b> | <b>14,328</b> | <b>16,591</b> | <b>29,978</b> | <b>408,820</b> |

**Table 2.3.3**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                       | B             | C             | D             | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P              |
|---|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|
| LLH-MWh                                 | Oct           | Nov           | Dec           | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Sum            |
| <b>Intra-Regional Transfers</b>         |               |               |               |              |              |              |              |              |              |              |              |              |              |              |                |
| <b>Contracts</b>                        | <b>27,784</b> | <b>28,462</b> | <b>27,702</b> | <b>3,253</b> | <b>2,725</b> | <b>2,935</b> | <b>1,434</b> | <b>1,434</b> | <b>3,246</b> | <b>2,869</b> | <b>3,095</b> | <b>1,585</b> | <b>1,510</b> | <b>3,020</b> | <b>111,056</b> |
| 1 BPA-P to AVWP Setl WNP3 Del           | -             | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| 2 BPA-P to BPA-T Ops IntrAgmt           | 2,944         | 3,180         | 3,095         | 3,246        | 2,718        | 2,935        | 1,434        | 1,434        | 3,246        | 2,869        | 3,095        | 1,585        | 1,510        | 3,020        | 36,314         |
| 3 BPA-P to Other Entities               | 23,400        | 25,275        | 24,600        | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | 73,275         |
| 4 BPA-P to PPL NSP RIn                  | 1,440         | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | 1,440          |
| 5 BPA-P to PSE Ops UBkr Repl            | -             | 7             | 7             | 7            | 7            | -            | -            | -            | -            | -            | -            | -            | -            | -            | 28             |
| 6 Other Entities to BPA-P               | -             | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| 7 PPL to BPA-P NSP SOut                 | -             | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| <b>8 Total Intra-Regional Transfers</b> | <b>27,784</b> | <b>28,462</b> | <b>27,702</b> | <b>3,253</b> | <b>2,725</b> | <b>2,935</b> | <b>1,434</b> | <b>1,434</b> | <b>3,246</b> | <b>2,869</b> | <b>3,095</b> | <b>1,585</b> | <b>1,510</b> | <b>3,020</b> | <b>111,056</b> |
| <b>Intra-Regional Contracts Out</b>     |               |               |               |              |              |              |              |              |              |              |              |              |              |              |                |
| 9 Federal Entities                      | 27,784        | 28,462        | 27,702        | 3,253        | 2,725        | 2,935        | 1,434        | 1,434        | 3,246        | 2,869        | 3,095        | 1,585        | 1,510        | 3,020        | 111,056        |
| 10 Investor Owned Utilities             | -             | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| 11 Marketer                             | -             | -             | -             | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -              |
| <b>12 Total Regional Contracts Out</b>  | <b>27,784</b> | <b>28,462</b> | <b>27,702</b> | <b>3,253</b> | <b>2,725</b> | <b>2,935</b> | <b>1,434</b> | <b>1,434</b> | <b>3,246</b> | <b>2,869</b> | <b>3,095</b> | <b>1,585</b> | <b>1,510</b> | <b>3,020</b> | <b>111,056</b> |
| <b>Intra-Regional Contracts In</b>      |               |               |               |              |              |              |              |              |              |              |              |              |              |              |                |
| 13 Federal Entities                     | 2,944         | 3,180         | 3,095         | 3,246        | 2,718        | 2,935        | 1,434        | 1,434        | 3,246        | 2,869        | 3,095        | 1,585        | 1,510        | 3,020        | 36,314         |
| 14 Investor Owned Utilities             | 1,440         | 7             | 7             | 7            | 7            | -            | -            | -            | -            | -            | -            | -            | -            | -            | 1,468          |
| 15 Marketer                             | 23,400        | 25,275        | 24,600        | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | -            | 73,275         |
| <b>16 Total Regional Contracts In</b>   | <b>27,784</b> | <b>28,462</b> | <b>27,702</b> | <b>3,253</b> | <b>2,725</b> | <b>2,935</b> | <b>1,434</b> | <b>1,434</b> | <b>3,246</b> | <b>2,869</b> | <b>3,095</b> | <b>1,585</b> | <b>1,510</b> | <b>3,020</b> | <b>111,056</b> |

**Table 2.4.1**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                     | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|---------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                            | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Pacific Northwest</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 CHPD to BPA CEAEA for Rock Island   | 18.0       | 18.1       | 17.1       | 18.2       | 17.8       | 16.8       | 17.3       | 17.3       | 16.6       | 17.3       | 17.2       | 17.3       | 16.3       | 17.6       | 17.4       |
| 2 CHPD to BPA CEAEA for Rocky Reach   | 37.2       | 36.8       | 35.8       | 38.0       | 37.4       | 36.4       | 37.6       | 37.6       | 36.3       | 37.6       | 37.7       | 37.6       | 35.2       | 37.4       | 37.0       |
| 3 DOPD to BPA CEAEA for Wells         | 23.8       | 23.6       | 23.0       | 23.8       | 23.6       | 24.0       | 24.3       | 24.3       | 23.5       | 24.3       | 24.4       | 24.3       | 22.8       | 24.2       | 23.8       |
| 4 GCPD to BPA CEAEA for Priest Rapids | 29.0       | 29.1       | 27.8       | 28.8       | 29.3       | 28.6       | 29.5       | 29.5       | 28.3       | 29.5       | 29.4       | 29.5       | 27.6       | 29.7       | 28.9       |
| 5 GCPD to BPA CEAEA for Wanapum       | 29.3       | 28.1       | 27.3       | 28.3       | 28.2       | 27.4       | 28.3       | 28.3       | 27.3       | 28.3       | 28.3       | 28.3       | 26.5       | 28.1       | 28.0       |
| <b>6 Total Imports From PNW</b>       | <b>137</b> | <b>136</b> | <b>131</b> | <b>137</b> | <b>136</b> | <b>133</b> | <b>137</b> | <b>137</b> | <b>132</b> | <b>137</b> | <b>137</b> | <b>137</b> | <b>128</b> | <b>137</b> | <b>135</b> |



**Table 2.4.1**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                     | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|---------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                            | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Pacific Northwest</b>              |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 CHPD to BPA CEAEA for Rock Island   | 17.4       | 16.4       | 17.2       | 16.6       | 17.1       | 17.4       | 17.3       | 17.3       | 16.6       | 17.3       | 17.2       | 16.0       | 17.5       | 17.6       | 17.1       |
| 2 CHPD to BPA CEAEA for Rocky Reach   | 37.7       | 36.0       | 37.7       | 36.3       | 37.1       | 37.8       | 37.6       | 37.6       | 36.3       | 37.6       | 37.7       | 34.7       | 37.9       | 37.4       | 37.1       |
| 3 DOPD to BPA CEAEA for Wells         | 24.4       | 23.3       | 24.4       | 23.5       | 24.0       | 24.4       | 24.3       | 24.3       | 23.5       | 24.3       | 24.4       | 22.4       | 24.5       | 24.2       | 24.0       |
| 4 GCPD to BPA CEAEA for Priest Rapids | 29.6       | 28.1       | 29.4       | 28.3       | 29.1       | 29.7       | 29.5       | 29.5       | 28.3       | 29.5       | 29.4       | 27.2       | 29.8       | 29.7       | 29.1       |
| 5 GCPD to BPA CEAEA for Wanapum       | 28.5       | 27.0       | 28.3       | 27.3       | 28.0       | 28.5       | 28.3       | 28.3       | 27.3       | 28.3       | 28.3       | 26.1       | 28.6       | 28.1       | 27.9       |
| <b>6 Total Imports From PNW</b>       | <b>138</b> | <b>131</b> | <b>137</b> | <b>132</b> | <b>135</b> | <b>138</b> | <b>137</b> | <b>137</b> | <b>132</b> | <b>137</b> | <b>137</b> | <b>126</b> | <b>138</b> | <b>137</b> | <b>135</b> |

**Table 2.4.2**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                     | B              | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M             | N             | O             | P                |
|---------------------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|
| HLH-MWh                               | Oct            | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           | Sum              |
| <b>Pacific Northwest</b>              |                |               |               |               |               |               |               |               |               |               |               |               |               |               |                  |
| 1 CHPD to BPA CEAEA for Rock Island   | 13,392         | 12,400        | 12,400        | 12,896        | 12,400        | 12,480        | 6,240         | 6,240         | 12,000        | 12,480        | 12,480        | 6,240         | 6,240         | 12,000        | 149,888          |
| 2 CHPD to BPA CEAEA for Rocky Reach   | 27,648         | 25,600        | 25,600        | 26,624        | 26,000        | 27,040        | 13,520        | 13,520        | 26,000        | 27,040        | 27,040        | 13,520        | 13,520        | 26,000        | 318,672          |
| 3 DOPD to BPA CEAEA for Wells         | 17,712         | 16,400        | 16,400        | 17,056        | 16,400        | 17,472        | 8,736         | 8,736         | 16,800        | 17,472        | 17,472        | 8,736         | 8,736         | 16,800        | 204,928          |
| 4 GCPD to BPA CEAEA for Priest Rapids | 21,600         | 20,000        | 20,000        | 20,800        | 20,400        | 21,216        | 10,608        | 10,608        | 20,400        | 21,216        | 21,216        | 10,608        | 10,608        | 20,400        | 249,680          |
| 5 GCPD to BPA CEAEA for Wanapum       | 21,168         | 19,600        | 19,600        | 20,384        | 19,600        | 20,384        | 10,192        | 10,192        | 19,600        | 20,384        | 20,384        | 10,192        | 10,192        | 19,600        | 241,472          |
| <b>6 Total Imports From PNW</b>       | <b>101,520</b> | <b>94,000</b> | <b>94,000</b> | <b>97,760</b> | <b>94,800</b> | <b>98,592</b> | <b>49,296</b> | <b>49,296</b> | <b>94,800</b> | <b>98,592</b> | <b>98,592</b> | <b>49,296</b> | <b>49,296</b> | <b>94,800</b> | <b>1,164,640</b> |

**Table 2.4.2**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                     | B              | C             | D             | E             | F             | G              | H             | I             | J             | K             | L             | M             | N             | O             | P                |
|---------------------------------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|
| HLH-MWh                               | Oct            | Nov           | Dec           | Jan           | Feb           | Mar            | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           | Sum              |
| <b>Pacific Northwest</b>              |                |               |               |               |               |                |               |               |               |               |               |               |               |               |                  |
| 1 CHPD to BPA CEAEA for Rock Island   | 12,960         | 11,520        | 12,480        | 12,000        | 11,520        | 12,960         | 6,240         | 6,240         | 12,000        | 12,480        | 12,480        | 5,760         | 6,720         | 12,000        | 147,360          |
| 2 CHPD to BPA CEAEA for Rocky Reach   | 28,080         | 24,960        | 27,040        | 26,000        | 24,960        | 28,080         | 13,520        | 13,520        | 26,000        | 27,040        | 27,040        | 12,480        | 14,560        | 26,000        | 319,280          |
| 3 DOPD to BPA CEAEA for Wells         | 18,144         | 16,128        | 17,472        | 16,800        | 16,128        | 18,144         | 8,736         | 8,736         | 16,800        | 17,472        | 17,472        | 8,064         | 9,408         | 16,800        | 206,304          |
| 4 GCPD to BPA CEAEA for Priest Rapids | 22,032         | 19,584        | 21,216        | 20,400        | 19,584        | 22,032         | 10,608        | 10,608        | 20,400        | 21,216        | 21,216        | 9,792         | 11,424        | 20,400        | 250,512          |
| 5 GCPD to BPA CEAEA for Wanapum       | 21,168         | 18,816        | 20,384        | 19,600        | 18,816        | 21,168         | 10,192        | 10,192        | 19,600        | 20,384        | 20,384        | 9,408         | 10,976        | 19,600        | 240,688          |
| <b>6 Total Imports From PNW</b>       | <b>102,384</b> | <b>91,008</b> | <b>98,592</b> | <b>94,800</b> | <b>91,008</b> | <b>102,384</b> | <b>49,296</b> | <b>49,296</b> | <b>94,800</b> | <b>98,592</b> | <b>98,592</b> | <b>45,504</b> | <b>53,088</b> | <b>94,800</b> | <b>1,164,144</b> |

**Table 2.4.3**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                     | B          | C            | D            | E            | F        | G          | H        | I        | J            | K        | L            | M        | N        | O            | P             |
|---------------------------------------|------------|--------------|--------------|--------------|----------|------------|----------|----------|--------------|----------|--------------|----------|----------|--------------|---------------|
| LLH-MWh                               | Oct        | Nov          | Dec          | Jan          | Feb      | Mar        | Apr1     | Apr16    | May          | Jun      | Jul          | Aug1     | Aug16    | Sep          | Sum           |
| <b>Pacific Northwest</b>              |            |              |              |              |          |            |          |          |              |          |              |          |          |              |               |
| 1 CHPD to BPA CEAEA for Rock Island   | -          | 642          | 344          | 656          | -        | -          | -        | -        | 344          | -        | 328          | -        | -        | 640          | 2,954         |
| 2 CHPD to BPA CEAEA for Rocky Reach   | -          | 963          | 1,032        | 1,640        | -        | -          | -        | -        | 1,032        | -        | 984          | -        | -        | 960          | 6,611         |
| 3 DOPD to BPA CEAEA for Wells         | -          | 642          | 688          | 656          | -        | 327        | -        | -        | 688          | -        | 656          | -        | -        | 640          | 4,297         |
| 4 GCPD to BPA CEAEA for Priest Rapids | -          | 963          | 688          | 656          | -        | -          | -        | -        | 688          | -        | 656          | -        | -        | 960          | 4,611         |
| 5 GCPD to BPA CEAEA for Wanapum       | 624        | 642          | 688          | 656          | -        | -          | -        | -        | 688          | -        | 656          | -        | -        | 640          | 4,594         |
| <b>6 Total Imports From PNW</b>       | <b>624</b> | <b>3,852</b> | <b>3,440</b> | <b>4,264</b> | <b>-</b> | <b>327</b> | <b>-</b> | <b>-</b> | <b>3,440</b> | <b>-</b> | <b>3,280</b> | <b>-</b> | <b>-</b> | <b>3,840</b> | <b>23,067</b> |

**Table 2.4.3**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                     | B        | C            | D            | E            | F        | G        | H        | I        | J            | K        | L            | M        | N        | O            | P             |
|---------------------------------------|----------|--------------|--------------|--------------|----------|----------|----------|----------|--------------|----------|--------------|----------|----------|--------------|---------------|
| LLH-MWh                               | Oct      | Nov          | Dec          | Jan          | Feb      | Mar      | Apr1     | Apr16    | May          | Jun      | Jul          | Aug1     | Aug16    | Sep          | Sum           |
| <b>Pacific Northwest</b>              |          |              |              |              |          |          |          |          |              |          |              |          |          |              |               |
| 1 CHPD to BPA CEAEA for Rock Island   | -        | 337          | 328          | 344          | -        | -        | -        | -        | 344          | -        | 328          | -        | -        | 640          | 2,321         |
| 2 CHPD to BPA CEAEA for Rocky Reach   | -        | 1,011        | 984          | 1,032        | -        | -        | -        | -        | 1,032        | -        | 984          | -        | -        | 960          | 6,003         |
| 3 DOPD to BPA CEAEA for Wells         | -        | 674          | 656          | 688          | -        | -        | -        | -        | 688          | -        | 656          | -        | -        | 640          | 4,002         |
| 4 GCPD to BPA CEAEA for Priest Rapids | -        | 674          | 656          | 688          | -        | -        | -        | -        | 688          | -        | 656          | -        | -        | 960          | 4,322         |
| 5 GCPD to BPA CEAEA for Wanapum       | -        | 674          | 656          | 688          | -        | -        | -        | -        | 688          | -        | 656          | -        | -        | 640          | 4,002         |
| <b>6 Total Imports From PNW</b>       | <b>-</b> | <b>3,370</b> | <b>3,280</b> | <b>3,440</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>-</b> | <b>3,440</b> | <b>-</b> | <b>3,280</b> | <b>-</b> | <b>-</b> | <b>3,840</b> | <b>20,650</b> |

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**3. HYDRO RESOURCE FORECASTS FOR FY 2020 AND FY 2021.....37**

**Table 3.1.1**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
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| A                               | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                      | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Regulated Hydro</b>          |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1 Albeni Falls Hydroelectric    | 35.7         | 16.7         | 16.0         | 17.2         | 12.6         | 12.0         | 14.7         | 18.4         | 28.2         | 34.9         | 33.2         | 24.1         | 18.8         | 24.1         | 22.4         |
| 2 Bonneville                    | 411          | 533          | 537          | 458          | 494          | 466          | 296          | 136          | 214          | 419          | 206          | 149          | 138          | 438          | 377          |
| 3 Chief Joseph                  | 934          | 1290         | 1249         | 984          | 1038         | 857          | 847          | 837          | 1096         | 1682         | 1302         | 1354         | 1201         | 948          | 1125         |
| 4 Dworshak                      | 61.3         | 60.9         | 60.7         | 60.5         | 60.3         | 60.3         | 60.5         | 61.6         | 67.5         | 170          | 440          | 439          | 343          | 180          | 140          |
| 5 Grand Coulee                  | 1,652        | 2,299        | 2,182        | 1,705        | 1,817        | 1,456        | 1,390        | 1,351        | 1,855        | 3,012        | 2,315        | 2,387        | 2,092        | 1,653        | 1,962        |
| 6 Hungry Horse                  | 79.0         | 83.8         | 84.5         | 85.9         | 85.2         | 83.3         | 63.4         | 25.9         | 43.2         | 58.4         | 110          | 80.6         | 80.6         | 108          | 78.9         |
| 7 Ice Harbor                    | 90.0         | 108          | 113          | 115          | 123          | 180          | 67.3         | 65.7         | 64.7         | 65.3         | 147          | 106          | 87.0         | 107          | 106          |
| 8 John Day                      | 664          | 912          | 894          | 738          | 801          | 782          | 523          | 383          | 439          | 888          | 705          | 651          | 566          | 708          | 715          |
| 9 Libby                         | 92.7         | 257          | 173          | 86.5         | 85.8         | 85.1         | 84.6         | 84.6         | 483          | 261          | 198          | 200          | 200          | 198          | 184          |
| 10 Little Goose                 | 93.7         | 111          | 113          | 119          | 111          | 176          | 82.2         | 79.6         | 248          | 172          | 149          | 111          | 92.5         | 112          | 132          |
| 11 Lower Granite                | 100          | 110          | 112          | 117          | 110          | 175          | 82.4         | 80.3         | 252          | 158          | 90.7         | 80.3         | 80.3         | 115          | 125          |
| 12 Lower Monumental             | 96.7         | 112          | 117          | 120          | 130          | 190          | 85.4         | 84.3         | 296          | 205          | 99.2         | 84.5         | 84.6         | 111          | 137          |
| 13 McNary                       | 455          | 592          | 576          | 480          | 522          | 487          | 268          | 272          | 267          | 313          | 306          | 283          | 272          | 491          | 419          |
| 14 The Dalles                   | 532          | 717          | 726          | 601          | 655          | 625          | 478          | 308          | 535          | 785          | 510          | 468          | 406          | 574          | 590          |
| <b>Total Regulated Hydro</b>    |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 15 Federal Entities             | 5,298        | 7,203        | 6,952        | 5,685        | 6,046        | 5,634        | 4,342        | 3,787        | 5,888        | 8,223        | 6,612        | 6,417        | 5,661        | 5,766        | 6,115        |
| <b>16 Total Regulated Hydro</b> | <b>5,298</b> | <b>7,203</b> | <b>6,952</b> | <b>5,685</b> | <b>6,046</b> | <b>5,634</b> | <b>4,342</b> | <b>3,787</b> | <b>5,888</b> | <b>8,223</b> | <b>6,612</b> | <b>6,417</b> | <b>5,661</b> | <b>5,766</b> | <b>6,115</b> |



**Table 3.1.1**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                               | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                      | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Regulated Hydro</b>          |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1 Albeni Falls Hydroelectric    | 35.7         | 16.7         | 16.0         | 17.2         | 12.6         | 12.0         | 14.7         | 18.4         | 35.4         | 44.0         | 36.9         | 24.1         | 18.8         | 24.1         | 24.1         |
| 2 Bonneville                    | 411          | 533          | 537          | 458          | 494          | 466          | 296          | 136          | 214          | 419          | 206          | 149          | 138          | 438          | 377          |
| 3 Chief Joseph                  | 934          | 1290         | 1249         | 984          | 1038         | 857          | 847          | 837          | 1096         | 1682         | 1302         | 1354         | 1201         | 948          | 1125         |
| 4 Dworshak                      | 61.3         | 60.9         | 60.7         | 60.5         | 60.3         | 60.3         | 60.5         | 61.6         | 67.5         | 170          | 440          | 439          | 343          | 180          | 140          |
| 5 Grand Coulee                  | 1,652        | 2,299        | 2,182        | 1,705        | 1,817        | 1,456        | 1,390        | 1,351        | 1,855        | 3,012        | 2,315        | 2,387        | 2,092        | 1,653        | 1,963        |
| 6 Hungry Horse                  | 79.0         | 83.8         | 84.5         | 85.9         | 85.2         | 83.3         | 63.4         | 25.9         | 43.2         | 58.4         | 110          | 110          | 109          | 108          | 81.3         |
| 7 Ice Harbor                    | 90.0         | 108          | 113          | 115          | 123          | 180          | 67.3         | 65.7         | 64.7         | 65.3         | 147          | 106          | 87.0         | 107          | 106          |
| 8 John Day                      | 664          | 912          | 894          | 738          | 801          | 782          | 523          | 383          | 439          | 888          | 705          | 651          | 566          | 708          | 715          |
| 9 Libby                         | 92.7         | 257          | 173          | 86.5         | 85.8         | 85.1         | 84.6         | 84.6         | 483          | 261          | 198          | 200          | 200          | 198          | 184          |
| 10 Little Goose                 | 93.7         | 111          | 113          | 119          | 111          | 176          | 82.2         | 79.6         | 248          | 172          | 149          | 111          | 92.5         | 112          | 132          |
| 11 Lower Granite                | 100          | 110          | 112          | 117          | 110          | 175          | 82.4         | 80.3         | 252          | 149          | 91.1         | 80.3         | 80.3         | 115          | 125          |
| 12 Lower Monumental             | 96.7         | 112          | 117          | 120          | 130          | 190          | 85.4         | 84.3         | 296          | 205          | 99.2         | 84.5         | 84.6         | 111          | 137          |
| 13 McNary                       | 455          | 592          | 576          | 480          | 522          | 487          | 268          | 272          | 267          | 313          | 306          | 283          | 272          | 491          | 419          |
| 14 The Dalles                   | 532          | 717          | 726          | 601          | 655          | 625          | 478          | 308          | 535          | 785          | 510          | 468          | 406          | 574          | 590          |
| <b>Total Regulated Hydro</b>    |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 15 Federal Entities             | 5,298        | 7,203        | 6,952        | 5,685        | 6,046        | 5,634        | 4,342        | 3,787        | 5,895        | 8,223        | 6,616        | 6,446        | 5,689        | 5,766        | 6,119        |
| <b>16 Total Regulated Hydro</b> | <b>5,298</b> | <b>7,203</b> | <b>6,952</b> | <b>5,685</b> | <b>6,046</b> | <b>5,634</b> | <b>4,342</b> | <b>3,787</b> | <b>5,895</b> | <b>8,223</b> | <b>6,616</b> | <b>6,446</b> | <b>5,689</b> | <b>5,766</b> | <b>6,119</b> |

**Table 3.1.2**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                               | B                | C                | D                | E                | F                | G                | H                | I              | J                | K                | L                | M                | N                | O                | P                 |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                         | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16          | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Regulated Hydro</b>          |                  |                  |                  |                  |                  |                  |                  |                |                  |                  |                  |                  |                  |                  |                   |
| 1 Albeni Falls Hydroelectric    | 15,197           | 6,596            | 6,535            | 7,295            | 5,022            | 5,096            | 3,028            | 3,772          | 11,484           | 14,350           | 14,126           | 4,966            | 4,122            | 9,522            | 111,111           |
| 2 Bonneville                    | 172,762          | 208,398          | 216,444          | 194,880          | 195,887          | 197,015          | 70,011           | 35,362         | 83,140           | 176,031          | 88,541           | 31,347           | 28,887           | 169,587          | 1,868,292         |
| 3 Chief Joseph                  | 500,058          | 648,441          | 646,205          | 496,761          | 507,967          | 446,277          | 200,530          | 199,745        | 599,508          | 888,167          | 784,938          | 384,495          | 347,157          | 496,669          | 7,146,916         |
| 4 Dworshak                      | 26,101           | 24,089           | 24,716           | 25,679           | 23,991           | 25,601           | 12,454           | 12,649         | 27,487           | 69,856           | 187,170          | 90,339           | 75,182           | 70,936           | 696,253           |
| 5 Grand Coulee                  | 884,761          | 1,155,130        | 1,128,984        | 861,023          | 888,866          | 758,701          | 329,198          | 322,338        | 1,014,324        | 1,590,080        | 1,395,328        | 677,747          | 604,822          | 866,070          | 12,477,371        |
| 6 Hungry Horse                  | 33,658           | 33,119           | 34,421           | 36,456           | 33,904           | 35,358           | 13,046           | 5,311          | 17,594           | 24,002           | 46,837           | 16,599           | 17,686           | 42,525           | 390,515           |
| 7 Ice Harbor                    | 41,752           | 47,397           | 64,648           | 67,174           | 66,852           | 92,070           | 14,972           | 13,527         | 27,157           | 27,525           | 65,610           | 22,384           | 19,602           | 47,393           | 618,065           |
| 8 John Day                      | 315,670          | 419,944          | 404,631          | 363,091          | 362,998          | 380,993          | 125,951          | 85,589         | 211,954          | 399,946          | 353,258          | 161,287          | 141,582          | 330,544          | 4,057,439         |
| 9 Libby                         | 39,487           | 101,679          | 70,376           | 36,712           | 34,120           | 36,149           | 17,409           | 17,361         | 196,726          | 107,032          | 84,253           | 41,254           | 43,840           | 78,088           | 904,486           |
| 10 Little Goose                 | 43,433           | 48,726           | 64,665           | 69,598           | 60,450           | 89,937           | 18,297           | 16,402         | 104,009          | 72,486           | 66,279           | 23,504           | 20,844           | 49,769           | 748,400           |
| 11 Lower Granite                | 46,536           | 48,230           | 64,180           | 68,622           | 59,946           | 89,218           | 18,336           | 16,536         | 105,772          | 66,571           | 40,392           | 17,021           | 18,082           | 51,089           | 710,531           |
| 12 Lower Monumental             | 44,841           | 49,366           | 67,109           | 70,231           | 70,328           | 96,843           | 18,996           | 17,365         | 124,162          | 86,484           | 44,190           | 17,922           | 19,051           | 49,408           | 776,297           |
| 13 McNary                       | 216,511          | 272,547          | 260,557          | 236,307          | 236,434          | 237,111          | 64,439           | 60,687         | 128,987          | 140,861          | 153,454          | 70,190           | 67,895           | 228,988          | 2,374,967         |
| 14 The Dalles                   | 253,101          | 329,942          | 328,718          | 295,815          | 296,841          | 304,449          | 115,100          | 68,672         | 258,609          | 353,315          | 255,402          | 115,818          | 101,403          | 268,158          | 3,345,342         |
| <b>Total Regulated Hydro</b>    |                  |                  |                  |                  |                  |                  |                  |                |                  |                  |                  |                  |                  |                  |                   |
| 15 Federal Entities             | 2,633,868        | 3,393,603        | 3,382,188        | 2,829,644        | 2,843,608        | 2,794,817        | 1,021,767        | 875,317        | 2,910,915        | 4,016,706        | 3,579,778        | 1,674,873        | 1,510,156        | 2,758,746        | 36,225,985        |
| <b>16 Total Regulated Hydro</b> | <b>2,633,868</b> | <b>3,393,603</b> | <b>3,382,188</b> | <b>2,829,644</b> | <b>2,843,608</b> | <b>2,794,817</b> | <b>1,021,767</b> | <b>875,317</b> | <b>2,910,915</b> | <b>4,016,706</b> | <b>3,579,778</b> | <b>1,674,873</b> | <b>1,510,156</b> | <b>2,758,746</b> | <b>36,225,985</b> |

**Table 3.1.2**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
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| A                               | B                | C                | D                | E                | F                | G                | H                | I              | J                | K                | L                | M                | N                | O                | P                 |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                         | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16          | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Regulated Hydro</b>          |                  |                  |                  |                  |                  |                  |                  |                |                  |                  |                  |                  |                  |                  |                   |
| 1 Albeni Falls Hydroelectric    | 15,197           | 6,596            | 6,527            | 7,295            | 4,849            | 5,096            | 3,039            | 3,772          | 15,029           | 17,353           | 15,023           | 4,966            | 4,122            | 9,522            | 118,384           |
| 2 Bonneville                    | 174,023          | 208,401          | 216,800          | 194,363          | 188,976          | 197,657          | 68,473           | 35,408         | 87,301           | 170,176          | 83,365           | 30,553           | 29,140           | 169,914          | 1,854,549         |
| 3 Chief Joseph                  | 504,321          | 639,771          | 638,289          | 492,707          | 478,292          | 438,514          | 197,863          | 197,786        | 605,881          | 904,963          | 765,460          | 380,795          | 345,473          | 494,136          | 7,084,253         |
| 4 Dworshak                      | 26,101           | 24,089           | 24,683           | 25,679           | 23,164           | 25,601           | 12,501           | 12,649         | 28,683           | 66,997           | 179,377          | 90,338           | 75,182           | 70,936           | 685,981           |
| 5 Grand Coulee                  | 892,304          | 1,139,685        | 1,115,152        | 853,992          | 836,940          | 745,503          | 324,820          | 319,177        | 1,025,109        | 1,620,150        | 1,360,704        | 671,224          | 601,889          | 861,653          | 12,368,303        |
| 6 Hungry Horse                  | 33,658           | 33,119           | 34,375           | 36,456           | 32,735           | 35,358           | 13,094           | 5,311          | 18,359           | 23,020           | 44,887           | 22,560           | 23,897           | 42,525           | 399,354           |
| 7 Ice Harbor                    | 42,005           | 47,447           | 64,801           | 66,658           | 64,547           | 91,839           | 14,972           | 13,527         | 28,303           | 26,499           | 63,044           | 22,384           | 19,602           | 47,393           | 613,023           |
| 8 John Day                      | 321,974          | 427,928          | 396,956          | 363,765          | 348,842          | 375,410          | 125,211          | 86,784         | 219,295          | 391,939          | 342,134          | 161,659          | 141,748          | 327,831          | 4,031,475         |
| 9 Libby                         | 39,487           | 101,679          | 70,274           | 36,712           | 32,944           | 36,149           | 17,474           | 17,361         | 205,280          | 102,652          | 80,745           | 41,254           | 43,840           | 78,088           | 903,937           |
| 10 Little Goose                 | 43,697           | 48,778           | 64,818           | 69,062           | 58,365           | 89,712           | 18,297           | 16,402         | 108,400          | 69,784           | 63,687           | 23,504           | 20,844           | 49,769           | 745,119           |
| 11 Lower Granite                | 46,819           | 48,281           | 64,332           | 68,094           | 57,878           | 88,995           | 18,336           | 16,536         | 110,236          | 60,432           | 39,007           | 17,021           | 18,082           | 51,089           | 705,139           |
| 12 Lower Monumental             | 45,114           | 49,418           | 67,268           | 69,691           | 67,903           | 96,600           | 18,996           | 17,365         | 129,403          | 83,260           | 42,462           | 17,922           | 19,051           | 49,408           | 773,861           |
| 13 McNary                       | 220,835          | 277,730          | 255,614          | 236,746          | 227,214          | 233,636          | 64,060           | 61,534         | 133,454          | 138,041          | 148,622          | 70,351           | 67,974           | 227,108          | 2,362,919         |
| 14 The Dalles                   | 258,156          | 336,215          | 322,482          | 296,365          | 285,264          | 299,988          | 114,423          | 69,630         | 267,565          | 346,242          | 247,360          | 116,085          | 101,522          | 265,956          | 3,327,253         |
| <b>Total Regulated Hydro</b>    |                  |                  |                  |                  |                  |                  |                  |                |                  |                  |                  |                  |                  |                  |                   |
| 15 Federal Entities             | 2,663,691        | 3,389,136        | 3,342,371        | 2,817,584        | 2,707,914        | 2,760,057        | 1,011,561        | 873,243        | 2,982,298        | 4,021,508        | 3,475,877        | 1,670,615        | 1,512,367        | 2,745,329        | 35,973,550        |
| <b>16 Total Regulated Hydro</b> | <b>2,663,691</b> | <b>3,389,136</b> | <b>3,342,371</b> | <b>2,817,584</b> | <b>2,707,914</b> | <b>2,760,057</b> | <b>1,011,561</b> | <b>873,243</b> | <b>2,982,298</b> | <b>4,021,508</b> | <b>3,475,877</b> | <b>1,670,615</b> | <b>1,512,367</b> | <b>2,745,329</b> | <b>35,973,550</b> |

**Table 3.1.3**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
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| A                               | B                | C                | D                | E                | F                | G                | H              | I              | J                | K                | L                | M              | N              | O                | P                 |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|------------------|----------------|----------------|------------------|-------------------|
| LLH-MWh                         | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1           | Apr16          | May              | Jun              | Jul              | Aug1           | Aug16          | Sep              | Sum               |
| <b>Regulated Hydro</b>          |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                |                  |                   |
| 1 Albeni Falls Hydroelectric    | 11,356           | 5,436            | 5,399            | 5,492            | 3,767            | 3,822            | 2,271          | 2,843          | 9,487            | 10,803           | 10,582           | 3,715          | 3,091          | 7,851            | 85,915            |
| 2 Bonneville                    | 132,887          | 176,130          | 182,982          | 145,565          | 148,044          | 149,166          | 36,483         | 13,473         | 76,159           | 125,883          | 64,715           | 22,419         | 24,188         | 145,757          | 1,443,849         |
| 3 Chief Joseph                  | 194,670          | 281,912          | 283,146          | 235,022          | 214,754          | 190,118          | 104,273        | 101,702        | 216,093          | 323,024          | 184,094          | 102,957        | 113,968        | 185,734          | 2,731,468         |
| 4 Dworshak                      | 19,505           | 19,853           | 20,417           | 19,334           | 17,994           | 19,201           | 9,341          | 9,535          | 22,707           | 52,590           | 140,208          | 67,583         | 56,387         | 58,486           | 533,139           |
| 5 Grand Coulee                  | 344,433          | 502,196          | 494,685          | 407,358          | 375,787          | 323,213          | 171,179        | 164,122        | 365,614          | 578,309          | 327,251          | 181,482        | 198,557        | 323,876          | 4,758,061         |
| 6 Hungry Horse                  | 25,152           | 27,295           | 28,435           | 27,448           | 25,428           | 26,519           | 9,784          | 4,003          | 14,534           | 18,069           | 35,085           | 12,417         | 13,264         | 35,062           | 302,495           |
| 7 Ice Harbor                    | 25,229           | 30,289           | 19,061           | 18,221           | 18,880           | 41,942           | 9,249          | 10,113         | 20,965           | 19,480           | 43,958           | 15,621         | 13,814         | 29,382           | 316,203           |
| 8 John Day                      | 178,312          | 237,900          | 260,621          | 185,638          | 194,397          | 200,209          | 62,337         | 52,416         | 114,528          | 239,520          | 171,177          | 73,176         | 75,929         | 179,288          | 2,225,447         |
| 9 Libby                         | 29,508           | 83,798           | 58,136           | 27,641           | 25,590           | 27,111           | 13,057         | 13,086         | 162,513          | 80,577           | 63,114           | 30,862         | 32,880         | 64,383           | 712,256           |
| 10 Little Goose                 | 26,245           | 31,139           | 19,066           | 18,878           | 17,071           | 40,970           | 11,303         | 12,262         | 80,294           | 51,301           | 44,406           | 16,402         | 14,689         | 30,855           | 414,882           |
| 11 Lower Granite                | 28,119           | 30,821           | 18,923           | 18,614           | 16,929           | 40,643           | 11,327         | 12,362         | 81,655           | 47,115           | 27,062           | 11,878         | 12,743         | 31,674           | 389,864           |
| 12 Lower Monumental             | 27,095           | 31,547           | 19,787           | 19,050           | 19,861           | 44,116           | 11,735         | 12,982         | 95,852           | 61,207           | 29,607           | 12,507         | 13,426         | 30,631           | 429,404           |
| 13 McNary                       | 122,300          | 154,399          | 167,824          | 120,817          | 126,618          | 124,600          | 31,893         | 37,166         | 69,697           | 84,359           | 74,359           | 31,845         | 36,411         | 124,204          | 1,306,490         |
| 14 The Dalles                   | 142,969          | 186,913          | 211,726          | 151,241          | 158,967          | 159,986          | 56,966         | 42,055         | 139,737          | 211,593          | 123,759          | 52,547         | 54,382         | 145,450          | 1,838,292         |
| <b>Total Regulated Hydro</b>    |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                |                  |                   |
| 15 Federal Entities             | 1,307,779        | 1,799,628        | 1,790,209        | 1,400,320        | 1,364,085        | 1,391,614        | 541,197        | 488,121        | 1,469,834        | 1,903,831        | 1,339,376        | 635,411        | 663,730        | 1,392,632        | 17,487,765        |
| <b>16 Total Regulated Hydro</b> | <b>1,307,779</b> | <b>1,799,628</b> | <b>1,790,209</b> | <b>1,400,320</b> | <b>1,364,085</b> | <b>1,391,614</b> | <b>541,197</b> | <b>488,121</b> | <b>1,469,834</b> | <b>1,903,831</b> | <b>1,339,376</b> | <b>635,411</b> | <b>663,730</b> | <b>1,392,632</b> | <b>17,487,765</b> |

**Table 3.1.3**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                               | B                | C                | D                | E                | F                | G                | H              | I              | J                | K                | L                | M              | N              | O                | P                 |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|------------------|----------------|----------------|------------------|-------------------|
| LLH-MWh                         | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1           | Apr16          | May              | Jun              | Jul              | Aug1           | Aug16          | Sep              | Sum               |
| <b>Regulated Hydro</b>          |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                |                  |                   |
| 1 Albeni Falls Hydroelectric    | 11,356           | 5,436            | 5,407            | 5,492            | 3,637            | 3,822            | 2,259          | 2,843          | 11,272           | 14,361           | 12,395           | 3,715          | 3,091          | 7,851            | 92,939            |
| 2 Bonneville                    | 131,626          | 176,126          | 182,633          | 146,072          | 143,095          | 148,524          | 38,020         | 13,427         | 71,998           | 131,739          | 69,891           | 23,213         | 23,936         | 145,430          | 1,445,729         |
| 3 Chief Joseph                  | 190,407          | 290,582          | 291,084          | 239,045          | 219,507          | 197,881          | 106,940        | 103,661        | 209,719          | 306,228          | 203,572          | 106,657        | 115,651        | 188,267          | 2,769,201         |
| 4 Dworshak                      | 19,505           | 19,853           | 20,450           | 19,334           | 17,373           | 19,201           | 9,294          | 9,535          | 21,512           | 55,448           | 148,002          | 67,584         | 56,387         | 58,486           | 541,963           |
| 5 Grand Coulee                  | 336,890          | 517,641          | 508,551          | 414,329          | 384,104          | 336,410          | 175,556        | 167,283        | 354,829          | 548,238          | 361,875          | 188,004        | 201,489        | 328,292          | 4,823,494         |
| 6 Hungry Horse                  | 25,152           | 27,295           | 28,481           | 27,448           | 24,551           | 26,519           | 9,736          | 4,003          | 13,769           | 19,052           | 37,036           | 16,878         | 17,923         | 35,062           | 312,902           |
| 7 Ice Harbor                    | 24,975           | 30,239           | 18,908           | 18,738           | 18,229           | 42,173           | 9,249          | 10,113         | 19,818           | 20,506           | 46,524           | 15,621         | 13,814         | 29,382           | 318,289           |
| 8 John Day                      | 172,007          | 229,915          | 268,310          | 184,944          | 189,333          | 205,792          | 63,077         | 51,221         | 107,187          | 247,526          | 182,301          | 72,805         | 75,763         | 182,002          | 2,232,185         |
| 9 Libby                         | 29,508           | 83,798           | 58,223           | 27,641           | 24,708           | 27,111           | 12,992         | 13,086         | 153,960          | 84,957           | 66,622           | 30,863         | 32,880         | 64,383           | 710,731           |
| 10 Little Goose                 | 25,981           | 31,087           | 18,913           | 19,414           | 16,483           | 41,196           | 11,303         | 12,262         | 75,904           | 54,003           | 46,998           | 16,402         | 14,689         | 30,855           | 415,490           |
| 11 Lower Granite                | 27,837           | 30,770           | 18,771           | 19,142           | 16,345           | 40,866           | 11,327         | 12,362         | 77,190           | 46,766           | 28,785           | 11,878         | 12,743         | 31,674           | 386,457           |
| 12 Lower Monumental             | 26,823           | 31,495           | 19,628           | 19,591           | 19,176           | 44,359           | 11,735         | 12,982         | 90,611           | 64,432           | 31,335           | 12,507         | 13,426         | 30,631           | 428,730           |
| 13 McNary                       | 117,976          | 149,217          | 172,775          | 120,366          | 123,319          | 128,074          | 32,272         | 36,319         | 65,230           | 87,179           | 79,191           | 31,683         | 36,332         | 126,083          | 1,306,016         |
| 14 The Dalles                   | 137,914          | 180,640          | 217,972          | 150,677          | 154,826          | 164,447          | 57,643         | 41,097         | 130,781          | 218,667          | 131,802          | 52,280         | 54,263         | 147,651          | 1,840,659         |
| <b>Total Regulated Hydro</b>    |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                |                  |                   |
| 15 Federal Entities             | 1,277,956        | 1,804,094        | 1,830,108        | 1,412,231        | 1,354,686        | 1,426,375        | 551,404        | 490,195        | 1,403,780        | 1,899,102        | 1,446,327        | 650,090        | 672,388        | 1,406,049        | 17,624,783        |
| <b>16 Total Regulated Hydro</b> | <b>1,277,956</b> | <b>1,804,094</b> | <b>1,830,108</b> | <b>1,412,231</b> | <b>1,354,686</b> | <b>1,426,375</b> | <b>551,404</b> | <b>490,195</b> | <b>1,403,780</b> | <b>1,899,102</b> | <b>1,446,327</b> | <b>650,090</b> | <b>672,388</b> | <b>1,406,049</b> | <b>17,624,783</b> |

**Table 3.1.4**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                               | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M             | N             | O             |
|---------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1Hr-MW                          | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           |
| <b>Regulated Hydro</b>          |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| 1 Albeni Falls Hydroelectric    | 3.03          | 4.59          | 4.10          | 1.78          | 1.90          | 1.91          | 2.07          | 2.46          | 10.3          | 13.1          | 19.4          | 14.3          | 14.3          | 14.3          |
| 2 Bonneville                    | 854           | 848           | 885           | 897           | 901           | 848           | 803           | 803           | 824           | 786           | 795           | 838           | 838           | 855           |
| 3 Chief Joseph                  | 2,146         | 2,261         | 2,263         | 2,221         | 2,273         | 2,141         | 2,223         | 2,223         | 2,306         | 2,318         | 2,318         | 2,306         | 2,306         | 2,144         |
| 4 Dworshak                      | 191           | 426           | 405           | 384           | 436           | 435           | 440           | 445           | 447           | 349           | 348           | 348           | 347           | 398           |
| 5 Grand Coulee                  | 4,814         | 4,086         | 3,685         | 4,205         | 4,870         | 4,888         | 4,252         | 4,137         | 4,283         | 4,293         | 4,752         | 4,779         | 4,722         | 3,871         |
| 6 Hungry Horse                  | 155           | 162           | 310           | 281           | 165           | 243           | 285           | 238           | 310           | 156           | 155           | 155           | 155           | 155           |
| 7 Ice Harbor                    | 469           | 508           | 524           | 508           | 578           | 560           | 554           | 541           | 596           | 635           | 493           | 633           | 633           | 614           |
| 8 John Day                      | 1,866         | 2,233         | 2,285         | 2,268         | 2,248         | 2,259         | 2,112         | 2,112         | 2,234         | 2,285         | 2,156         | 2,187         | 2,187         | 1,865         |
| 9 Libby                         | 593           | 589           | 583           | 484           | 526           | 528           | 479           | 479           | 459           | 464           | 364           | 397           | 397           | 492           |
| 10 Little Goose                 | 763           | 767           | 821           | 873           | 846           | 854           | 764           | 740           | 848           | 843           | 823           | 654           | 654           | 806           |
| 11 Lower Granite                | 775           | 770           | 780           | 806           | 846           | 857           | 776           | 756           | 867           | 867           | 750           | 633           | 633           | 767           |
| 12 Lower Monumental             | 701           | 763           | 868           | 878           | 878           | 853           | 808           | 798           | 860           | 780           | 708           | 650           | 650           | 705           |
| 13 McNary                       | 952           | 979           | 1033          | 1062          | 1061          | 1055          | 1035          | 1035          | 1049          | 988           | 1053          | 1045          | 1045          | 991           |
| 14 The Dalles                   | 1,578         | 1,607         | 1,725         | 1,697         | 1,858         | 1,862         | 1,844         | 1,844         | 1,827         | 1,752         | 1,808         | 1,780         | 1,780         | 1,652         |
| <b>Total Regulated Hydro</b>    |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| 15 Federal Entities             | 15,860        | 16,002        | 16,172        | 16,565        | 17,487        | 17,386        | 16,378        | 16,153        | 16,921        | 16,530        | 16,542        | 16,419        | 16,361        | 15,329        |
| <b>16 Total Regulated Hydro</b> | <b>15,860</b> | <b>16,002</b> | <b>16,172</b> | <b>16,565</b> | <b>17,487</b> | <b>17,386</b> | <b>16,378</b> | <b>16,153</b> | <b>16,921</b> | <b>16,530</b> | <b>16,542</b> | <b>16,419</b> | <b>16,361</b> | <b>15,329</b> |

**Table 3.1.4**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                               | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M             | N             | O             |
|---------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1Hr-MW                          | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1          | Aug16         | Sep           |
| <b>Regulated Hydro</b>          |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| 1 Albeni Falls Hydroelectric    | 3.03          | 2.04          | 1.82          | 1.78          | 1.90          | 1.91          | 2.07          | 2.46          | 2.93          | 3.75          | 4.08          | 4.08          | 4.08          | 14.3          |
| 2 Bonneville                    | 854           | 848           | 885           | 897           | 901           | 848           | 803           | 803           | 824           | 786           | 795           | 838           | 838           | 855           |
| 3 Chief Joseph                  | 2,236         | 2,283         | 2,261         | 2,248         | 2,289         | 2,108         | 2,213         | 2,213         | 2,328         | 2,318         | 2,328         | 2,316         | 2,316         | 2,034         |
| 4 Dworshak                      | 375           | 439           | 311           | 384           | 436           | 435           | 440           | 445           | 447           | 449           | 449           | 448           | 447           | 387           |
| 5 Grand Coulee                  | 3,750         | 4,042         | 4,022         | 4,047         | 4,569         | 4,409         | 3,993         | 3,885         | 4,186         | 4,849         | 5,120         | 5,007         | 4,947         | 4,404         |
| 6 Hungry Horse                  | 158           | 282           | 310           | 206           | 155           | 155           | 143           | 119           | 155           | 210           | 155           | 155           | 155           | 155           |
| 7 Ice Harbor                    | 627           | 610           | 672           | 596           | 681           | 662           | 654           | 639           | 629           | 635           | 515           | 565           | 565           | 672           |
| 8 John Day                      | 2,081         | 2,285         | 2,285         | 2,268         | 2,266         | 2,268         | 2,129         | 2,129         | 2,172         | 2,267         | 2,129         | 2,216         | 2,216         | 2,282         |
| 9 Libby                         | 517           | 567           | 583           | 502           | 530           | 470           | 416           | 415           | 459           | 464           | 472           | 370           | 369           | 458           |
| 10 Little Goose                 | 771           | 840           | 807           | 873           | 864           | 856           | 766           | 742           | 848           | 847           | 769           | 732           | 732           | 787           |
| 11 Lower Granite                | 735           | 740           | 857           | 796           | 856           | 857           | 776           | 756           | 867           | 867           | 778           | 580           | 580           | 718           |
| 12 Lower Monumental             | 701           | 771           | 870           | 878           | 878           | 853           | 808           | 798           | 860           | 775           | 751           | 645           | 645           | 690           |
| 13 McNary                       | 930           | 979           | 973           | 1045          | 981           | 1009          | 1026          | 1026          | 1050          | 981           | 971           | 935           | 935           | 983           |
| 14 The Dalles                   | 1,656         | 1,725         | 1,784         | 1,880         | 1,752         | 1,719         | 1,747         | 1,747         | 1,799         | 1,762         | 1,744         | 1,722         | 1,722         | 1,821         |
| <b>Total Regulated Hydro</b>    |               |               |               |               |               |               |               |               |               |               |               |               |               |               |
| 15 Federal Entities             | 15,395        | 16,413        | 16,623        | 16,622        | 17,159        | 16,651        | 15,916        | 15,720        | 16,627        | 17,214        | 16,981        | 16,531        | 16,470        | 16,261        |
| <b>16 Total Regulated Hydro</b> | <b>15,395</b> | <b>16,413</b> | <b>16,623</b> | <b>16,622</b> | <b>17,159</b> | <b>16,651</b> | <b>15,916</b> | <b>15,720</b> | <b>16,627</b> | <b>17,214</b> | <b>16,981</b> | <b>16,531</b> | <b>16,470</b> | <b>16,261</b> |

**Table 3.2.1**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                                 | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                        | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Independent Hydro</b>          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 Anderson Ranch                  | 4.19       | 4.36       | 4.27       | 4.31       | 4.76       | 4.31       | 9.41       | 9.41       | 11.8       | 37.0       | 33.2       | 20.1       | 20.1       | 8.78       | 12.2       |
| 2 Big Cliff                       | 10.8       | 13.0       | 6.45       | 3.86       | 5.84       | 5.84       | 8.70       | 14.5       | 19.9       | 19.6       | 7.07       | 5.84       | 5.84       | 10.0       | 9.98       |
| 3 Black Canyon                    | 5.45       | 3.61       | 2.98       | 3.27       | 3.53       | 4.19       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.31       | 6.17       |
| 4 Boise River Diversion           | 0.73       | 0          | 0          | 0          | 0          | 0          | 0.87       | 0.87       | 2.50       | 2.50       | 2.50       | 2.46       | 2.46       | 2.50       | 1.17       |
| 5 Chandler                        | 5.70       | 7.34       | 3.38       | 5.51       | 7.47       | 9.80       | 6.06       | 6.06       | 5.97       | 5.80       | 6.09       | 4.60       | 4.60       | 5.59       | 6.10       |
| 6 Cougar                          | 26.7       | 23.3       | 8.71       | 6.40       | 6.19       | 13.0       | 29.0       | 29.0       | 29.0       | 29.0       | 16.7       | 25.3       | 23.4       | 16.2       | 19.0       |
| 7 Cowlitz Falls                   | 6.20       | 3.10       | 23.1       | 10.00      | 13.7       | 33.3       | 46.1       | 50.3       | 63.6       | 66.3       | 28.9       | 13.3       | 10.5       | 9.50       | 26.5       |
| 8 Detroit                         | 42.8       | 45.6       | 19.7       | 11.4       | 18.1       | 20.1       | 34.9       | 64.3       | 106        | 90.7       | 30.3       | 24.7       | 24.5       | 42.3       | 41.7       |
| 9 Dexter                          | 12.4       | 15.7       | 3.80       | 3.37       | 4.72       | 4.72       | 11.7       | 12.3       | 16.5       | 16.6       | 5.95       | 4.72       | 4.88       | 11.4       | 9.31       |
| 10 Foster                         | 6.49       | 7.56       | 13.0       | 4.15       | 9.19       | 20.8       | 22.5       | 23.0       | 23.0       | 23.0       | 6.17       | 5.61       | 5.14       | 6.77       | 12.3       |
| 11 Green Peter                    | 19.3       | 19.3       | 30.3       | 7.73       | 0.37       | 32.9       | 88.5       | 44.8       | 57.9       | 48.8       | 9.57       | 4.54       | 14.9       | 22.1       | 27.1       |
| 12 Green Springs                  | 5.02       | 5.95       | 6.34       | 6.94       | 6.74       | 7.97       | 8.26       | 8.26       | 8.78       | 8.98       | 8.01       | 7.94       | 7.94       | 6.90       | 7.32       |
| 13 Hills Creek                    | 22.8       | 26.9       | 4.86       | 3.84       | 4.59       | 5.19       | 27.7       | 31.3       | 35.0       | 35.0       | 13.9       | 7.89       | 7.16       | 26.3       | 17.9       |
| 14 Lookout Point                  | 45.2       | 47.3       | 8.78       | 7.79       | 11.5       | 14.7       | 44.8       | 50.5       | 86.7       | 75.0       | 24.2       | 19.1       | 19.7       | 45.4       | 36.1       |
| 15 Lost Creek                     | 37.0       | 19.0       | 18.8       | 18.5       | 13.0       | 13.6       | 14.6       | 15.7       | 56.4       | 56.4       | 46.4       | 44.3       | 39.2       | 23.8       | 30.1       |
| 16 Minidoka                       | 6.48       | 2.39       | 2.32       | 2.32       | 2.57       | 2.32       | 10.3       | 10.3       | 24.6       | 22.7       | 21.7       | 19.0       | 19.0       | 11.5       | 10.7       |
| 17 Palisades                      | 45.5       | 11.3       | 11.2       | 11.4       | 12.8       | 28.2       | 51.7       | 51.7       | 152        | 151        | 127        | 144        | 144        | 56.9       | 67.3       |
| 18 Roza                           | 4.08       | 1.15       | 4.09       | 2.59       | 3.12       | 9.41       | 11.4       | 11.4       | 10.8       | 10.9       | 10.6       | 10.5       | 10.5       | 3.39       | 6.86       |
| <b>Total Independent Hydro</b>    |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 19 Federal Entities               | 307        | 257        | 172        | 113        | 128        | 230        | 435        | 442        | 719        | 708        | 407        | 373        | 373        | 318        | 348        |
| <b>20 Total Independent Hydro</b> | <b>307</b> | <b>257</b> | <b>172</b> | <b>113</b> | <b>128</b> | <b>230</b> | <b>435</b> | <b>442</b> | <b>719</b> | <b>708</b> | <b>407</b> | <b>373</b> | <b>373</b> | <b>318</b> | <b>348</b> |



**Table 3.2.1**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                                 | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P          |
|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Energy-aMW                        | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Avg        |
| <b>Independent Hydro</b>          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 Anderson Ranch                  | 4.19       | 4.36       | 4.27       | 4.31       | 4.76       | 4.31       | 9.41       | 9.41       | 11.8       | 37.0       | 33.2       | 20.1       | 20.1       | 8.78       | 12.2       |
| 2 Big Cliff                       | 10.8       | 13.0       | 6.45       | 3.86       | 5.84       | 5.84       | 8.70       | 14.5       | 19.9       | 19.6       | 7.07       | 5.84       | 5.84       | 10.0       | 9.99       |
| 3 Black Canyon                    | 5.45       | 3.61       | 2.98       | 3.27       | 3.53       | 4.19       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.31       | 6.18       |
| 4 Boise River Diversion           | 0.73       | 0          | 0          | 0          | 0          | 0          | 0.87       | 0.87       | 2.50       | 2.50       | 2.50       | 2.46       | 2.46       | 2.50       | 1.18       |
| 5 Chandler                        | 5.70       | 7.34       | 3.38       | 5.51       | 7.47       | 9.80       | 6.06       | 6.06       | 5.97       | 5.80       | 6.09       | 4.60       | 4.60       | 5.59       | 6.10       |
| 6 Cougar                          | 26.7       | 23.3       | 8.71       | 6.40       | 6.19       | 13.0       | 29.0       | 29.0       | 29.0       | 29.0       | 16.7       | 25.3       | 23.4       | 16.2       | 19.1       |
| 7 Cowlitz Falls                   | 6.20       | 3.10       | 23.1       | 10.00      | 13.7       | 33.3       | 46.1       | 50.3       | 63.6       | 66.3       | 28.9       | 13.3       | 10.5       | 9.50       | 26.5       |
| 8 Detroit                         | 42.8       | 45.6       | 19.7       | 11.4       | 18.1       | 20.1       | 34.9       | 64.3       | 106        | 90.7       | 30.3       | 24.7       | 24.5       | 42.3       | 41.8       |
| 9 Dexter                          | 12.4       | 15.7       | 3.80       | 3.37       | 4.72       | 4.72       | 11.7       | 12.3       | 16.5       | 16.6       | 5.95       | 4.72       | 4.88       | 11.4       | 9.32       |
| 10 Foster                         | 6.49       | 7.56       | 13.0       | 4.15       | 9.19       | 20.8       | 22.5       | 23.0       | 23.0       | 23.0       | 6.17       | 5.61       | 5.14       | 6.77       | 12.4       |
| 11 Green Peter                    | 19.3       | 19.3       | 30.3       | 7.73       | 0.37       | 32.9       | 88.5       | 44.8       | 57.9       | 48.8       | 9.57       | 4.54       | 14.9       | 22.1       | 27.2       |
| 12 Green Springs                  | 5.02       | 5.95       | 6.34       | 6.94       | 6.74       | 7.97       | 8.26       | 8.26       | 8.78       | 8.98       | 8.01       | 7.94       | 7.94       | 6.90       | 7.32       |
| 13 Hills Creek                    | 22.8       | 26.9       | 4.86       | 3.84       | 4.59       | 5.19       | 27.7       | 31.3       | 35.0       | 35.0       | 13.9       | 7.89       | 7.16       | 26.3       | 17.9       |
| 14 Lookout Point                  | 45.2       | 47.3       | 8.78       | 7.79       | 11.5       | 14.7       | 44.8       | 50.5       | 86.7       | 75.0       | 24.2       | 19.1       | 19.7       | 45.4       | 36.2       |
| 15 Lost Creek                     | 37.0       | 19.0       | 18.8       | 18.5       | 13.0       | 13.6       | 14.6       | 15.7       | 56.4       | 56.4       | 46.4       | 44.3       | 39.2       | 23.8       | 30.1       |
| 16 Minidoka                       | 6.48       | 2.39       | 2.32       | 2.32       | 2.57       | 2.32       | 10.3       | 10.3       | 24.6       | 22.7       | 21.7       | 19.0       | 19.0       | 11.5       | 10.7       |
| 17 Palisades                      | 45.5       | 11.3       | 11.2       | 11.4       | 12.8       | 28.2       | 51.7       | 51.7       | 152        | 151        | 127        | 144        | 144        | 56.9       | 67.4       |
| 18 Roza                           | 4.08       | 1.15       | 4.09       | 2.59       | 3.12       | 9.41       | 11.4       | 11.4       | 10.8       | 10.9       | 10.6       | 10.5       | 10.5       | 3.39       | 6.87       |
| <b>Total Independent Hydro</b>    |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 19 Federal Entities               | 307        | 257        | 172        | 113        | 128        | 230        | 435        | 442        | 719        | 708        | 407        | 373        | 373        | 318        | 348        |
| <b>20 Total Independent Hydro</b> | <b>307</b> | <b>257</b> | <b>172</b> | <b>113</b> | <b>128</b> | <b>230</b> | <b>435</b> | <b>442</b> | <b>719</b> | <b>708</b> | <b>407</b> | <b>373</b> | <b>373</b> | <b>318</b> | <b>348</b> |

**Table 3.2.2**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                                 | B              | C              | D             | E             | F             | G              | H              | I              | J              | K              | L              | M             | N             | O              | P                |
|-----------------------------------|----------------|----------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|----------------|------------------|
| HLH-MWh                           | Oct            | Nov            | Dec           | Jan           | Feb           | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1          | Aug16         | Sep            | Sum              |
| <b>Independent Hydro</b>          |                |                |               |               |               |                |                |                |                |                |                |               |               |                |                  |
| 1 Anderson Ranch                  | 1,773          | 1,814          | 1,858         | 1,829         | 1,882         | 1,848          | 1,913          | 1,913          | 5,032          | 15,312         | 14,005         | 4,107         | 4,381         | 3,585          | 61,253           |
| 2 Big Cliff                       | 4,685          | 5,190          | 2,578         | 1,608         | 2,336         | 2,430          | 1,810          | 3,023          | 7,978          | 8,137          | 2,940          | 1,215         | 1,215         | 4,018          | 49,162           |
| 3 Black Canyon                    | 2,247          | 1,476          | 1,276         | 1,387         | 1,382         | 1,788          | 1,737          | 1,737          | 3,624          | 3,499          | 3,601          | 1,720         | 1,835         | 3,423          | 30,731           |
| 4 Boise River Diversion           | 295            | -              | -             | -             | -             | -              | -              | 180            | 1,073          | 1,033          | 1,060          | 505           | 539           | 1,032          | 5,718            |
| 5 Chandler                        | 2,390          | 3,168          | 1,337         | 2,297         | 2,953         | 4,150          | 1,229          | 1,229          | 2,518          | 2,328          | 2,418          | 985           | 1,051         | 2,260          | 30,313           |
| 6 Cougar                          | 11,517         | 9,302          | 3,485         | 2,663         | 2,478         | 5,394          | 6,032          | 6,032          | 11,600         | 12,064         | 6,929          | 5,270         | 4,858         | 6,485          | 94,110           |
| 7 Cowlitz Falls                   | 2,625          | 1,213          | 9,421         | 4,112         | 5,403         | 14,115         | 9,398          | 10,254         | 26,188         | 27,333         | 11,502         | 2,693         | 2,267         | 3,979          | 130,503          |
| 8 Detroit                         | 31,848         | 32,881         | 14,650        | 4,755         | 12,573        | 14,952         | 12,575         | 23,131         | 46,014         | 47,827         | 22,544         | 8,876         | 9,406         | 30,450         | 312,482          |
| 9 Dexter                          | 5,346          | 6,288          | 1,520         | 1,402         | 1,889         | 1,965          | 2,441          | 2,563          | 6,601          | 6,918          | 2,477          | 982           | 1,016         | 4,541          | 45,950           |
| 10 Foster                         | 2,804          | 3,025          | 5,216         | 1,728         | 3,677         | 8,669          | 4,689          | 4,784          | 9,200          | 9,568          | 2,565          | 1,167         | 1,069         | 2,710          | 60,870           |
| 11 Green Peter                    | 8,354          | 7,735          | 22,568        | 3,215         | 149           | 24,457         | 19,344         | 16,111         | 37,200         | 35,117         | 3,982          | 944           | 3,103         | 8,830          | 191,110          |
| 12 Green Springs                  | 2,613          | 4,036          | 4,588         | 4,776         | 4,254         | 5,115          | 2,311          | 2,311          | 4,521          | 4,529          | 3,998          | 1,958         | 2,088         | 3,161          | 50,258           |
| 13 Hills Creek                    | 9,831          | 10,749         | 1,946         | 1,597         | 1,838         | 2,161          | 5,766          | 6,511          | 14,000         | 14,560         | 5,776          | 1,641         | 1,490         | 10,508         | 88,372           |
| 14 Lookout Point                  | 33,644         | 34,103         | 3,510         | 3,240         | 4,602         | 6,125          | 16,120         | 18,196         | 55,200         | 53,994         | 18,021         | 3,981         | 4,095         | 32,708         | 287,539          |
| 15 Lost Creek                     | 16,004         | 7,600          | 7,505         | 7,694         | 5,201         | 5,651          | 3,043          | 3,258          | 22,560         | 23,462         | 19,293         | 9,206         | 8,144         | 9,507          | 148,128          |
| 16 Minidoka                       | 2,682          | 992            | 988           | 992           | 1,126         | 986            | 2,097          | 2,097          | 10,493         | 9,332          | 9,127          | 3,882         | 4,141         | 4,759          | 53,695           |
| 17 Palisades                      | 19,262         | 4,630          | 4,699         | 4,896         | 5,084         | 12,059         | 10,567         | 10,567         | 65,062         | 61,993         | 53,674         | 29,820        | 31,808        | 23,344         | 337,465          |
| 18 Roza                           | 1,679          | -              | 1,647         | 1,090         | 1,242         | 3,998          | 2,359          | 2,359          | 4,546          | 4,523          | 4,314          | 2,206         | 2,353         | -              | 32,316           |
| <b>Total Independent Hydro</b>    |                |                |               |               |               |                |                |                |                |                |                |               |               |                |                  |
| 19 Federal Entities               | 159,600        | 134,202        | 88,794        | 49,281        | 58,069        | 115,862        | 103,429        | 116,256        | 333,409        | 341,531        | 188,227        | 81,158        | 84,858        | 155,298        | 2,009,974        |
| <b>20 Total Independent Hydro</b> | <b>159,600</b> | <b>134,202</b> | <b>88,794</b> | <b>49,281</b> | <b>58,069</b> | <b>115,862</b> | <b>103,429</b> | <b>116,256</b> | <b>333,409</b> | <b>341,531</b> | <b>188,227</b> | <b>81,158</b> | <b>84,858</b> | <b>155,298</b> | <b>2,009,974</b> |

**Table 3.2.2**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                                 | B              | C              | D             | E             | F             | G              | H              | I              | J              | K              | L              | M             | N             | O              | P                |
|-----------------------------------|----------------|----------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|----------------|------------------|
| HLH-MWh                           | Oct            | Nov            | Dec           | Jan           | Feb           | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1          | Aug16         | Sep            | Sum              |
| <b>Independent Hydro</b>          |                |                |               |               |               |                |                |                |                |                |                |               |               |                |                  |
| 1 Anderson Ranch                  | 1,773          | 1,814          | 1,858         | 1,829         | 1,817         | 1,848          | 1,913          | 1,913          | 5,032          | 15,312         | 14,005         | 4,107         | 4,381         | 3,585          | 61,188           |
| 2 Big Cliff                       | 4,685          | 4,982          | 2,681         | 1,546         | 2,243         | 2,523          | 1,810          | 3,023          | 7,978          | 8,137          | 2,940          | 1,121         | 1,308         | 4,018          | 48,996           |
| 3 Black Canyon                    | 2,247          | 1,476          | 1,276         | 1,387         | 1,334         | 1,788          | 1,737          | 1,737          | 3,624          | 3,499          | 3,601          | 1,720         | 1,835         | 3,423          | 30,684           |
| 4 Boise River Diversion           | 295            | -              | -             | -             | -             | -              | -              | 180            | 1,073          | 1,033          | 1,060          | 505           | 539           | 1,032          | 5,718            |
| 5 Chandler                        | 2,390          | 3,168          | 1,337         | 2,297         | 2,851         | 4,150          | 1,229          | 1,229          | 2,518          | 2,328          | 2,418          | 985           | 1,051         | 2,260          | 30,211           |
| 6 Cougar                          | 11,517         | 8,930          | 3,625         | 2,561         | 2,378         | 5,602          | 6,032          | 6,032          | 11,600         | 12,064         | 6,929          | 4,865         | 5,232         | 6,485          | 93,852           |
| 7 Cowlitz Falls                   | 2,625          | 1,213          | 9,421         | 4,112         | 5,217         | 14,115         | 9,398          | 10,254         | 26,188         | 27,333         | 11,502         | 2,693         | 2,267         | 3,979          | 130,316          |
| 8 Detroit                         | 31,848         | 32,881         | 14,650        | 4,576         | 12,140        | 14,952         | 12,575         | 23,131         | 46,014         | 47,827         | 22,544         | 8,876         | 9,406         | 30,450         | 311,870          |
| 9 Dexter                          | 5,346          | 6,036          | 1,581         | 1,348         | 1,814         | 2,040          | 2,441          | 2,563          | 6,601          | 6,918          | 2,477          | 907           | 1,094         | 4,541          | 45,708           |
| 10 Foster                         | 2,804          | 2,904          | 5,425         | 1,661         | 3,530         | 9,003          | 4,689          | 4,784          | 9,200          | 9,568          | 2,565          | 1,077         | 1,151         | 2,710          | 61,070           |
| 11 Green Peter                    | 8,354          | 7,426          | 22,568        | 3,091         | 143           | 24,457         | 19,344         | 16,111         | 37,200         | 35,117         | 3,982          | 871           | 3,342         | 8,830          | 190,837          |
| 12 Green Springs                  | 2,613          | 4,036          | 4,588         | 4,776         | 4,108         | 5,115          | 2,311          | 2,311          | 4,521          | 4,529          | 3,998          | 1,958         | 2,088         | 3,161          | 50,111           |
| 13 Hills Creek                    | 9,831          | 10,319         | 2,024         | 1,535         | 1,764         | 2,244          | 5,766          | 6,511          | 14,000         | 14,560         | 5,776          | 1,515         | 1,604         | 10,508         | 87,956           |
| 14 Lookout Point                  | 33,644         | 34,103         | 3,650         | 3,116         | 4,418         | 6,361          | 16,120         | 18,196         | 55,200         | 53,994         | 18,021         | 3,674         | 4,410         | 32,708         | 287,615          |
| 15 Lost Creek                     | 16,004         | 7,296          | 7,805         | 7,398         | 4,993         | 5,869          | 3,043          | 3,258          | 22,560         | 23,462         | 19,293         | 8,497         | 8,770         | 9,507          | 147,756          |
| 16 Minidoka                       | 2,682          | 992            | 988           | 992           | 1,087         | 986            | 2,097          | 2,097          | 10,493         | 9,332          | 9,127          | 3,882         | 4,141         | 4,759          | 53,656           |
| 17 Palisades                      | 19,262         | 4,630          | 4,699         | 4,896         | 4,909         | 12,059         | 10,567         | 10,567         | 65,062         | 61,993         | 53,674         | 29,820        | 31,808        | 23,344         | 337,290          |
| 18 Roza                           | 1,679          | -              | 1,647         | 1,090         | 1,200         | 3,998          | 2,359          | 2,359          | 4,546          | 4,523          | 4,314          | 2,206         | 2,353         | -              | 32,273           |
| <b>Total Independent Hydro</b>    |                |                |               |               |               |                |                |                |                |                |                |               |               |                |                  |
| 19 Federal Entities               | 159,600        | 132,206        | 89,824        | 48,212        | 55,944        | 117,108        | 103,429        | 116,256        | 333,409        | 341,531        | 188,227        | 79,280        | 86,780        | 155,298        | 2,007,106        |
| <b>20 Total Independent Hydro</b> | <b>159,600</b> | <b>132,206</b> | <b>89,824</b> | <b>48,212</b> | <b>55,944</b> | <b>117,108</b> | <b>103,429</b> | <b>116,256</b> | <b>333,409</b> | <b>341,531</b> | <b>188,227</b> | <b>79,280</b> | <b>86,780</b> | <b>155,298</b> | <b>2,007,106</b> |

**Table 3.2.3**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                                 | B             | C             | D             | E             | F             | G             | H             | I             | J              | K              | L              | M             | N             | O             | P                |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|---------------|------------------|
| LLH-MWh                           | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May            | Jun            | Jul            | Aug1          | Aug16         | Sep           | Sum              |
| <b>Independent Hydro</b>          |               |               |               |               |               |               |               |               |                |                |                |               |               |               |                  |
| 1 Anderson Ranch                  | 1,346         | 1,327         | 1,319         | 1,377         | 1,431         | 1,352         | 1,473         | 1,473         | 3,746          | 11,295         | 10,723         | 3,140         | 3,349         | 2,736         | 46,088           |
| 2 Big Cliff                       | 3,383         | 4,165         | 2,217         | 1,268         | 1,729         | 1,910         | 1,323         | 2,209         | 6,861          | 5,946          | 2,318          | 888           | 1,028         | 3,214         | 38,459           |
| 3 Black Canyon                    | 1,809         | 1,128         | 945           | 1,048         | 1,074         | 1,323         | 1,334         | 1,334         | 2,721          | 2,641          | 2,744          | 1,350         | 1,440         | 2,558         | 23,450           |
| 4 Boise River Diversion           | 250           | -             | -             | -             | -             | -             | 315           | 135           | 785            | 764            | 797            | 380           | 405           | 765           | 4,596            |
| 5 Chandler                        | 1,853         | 2,126         | 1,177         | 1,805         | 2,247         | 3,134         | 952           | 952           | 1,926          | 1,848          | 2,115          | 670           | 714           | 1,763         | 23,283           |
| 6 Cougar                          | 8,318         | 7,465         | 2,997         | 2,100         | 1,833         | 4,240         | 4,408         | 4,408         | 9,976          | 8,816          | 5,464          | 3,851         | 4,111         | 5,188         | 73,175           |
| 7 Cowlitz Falls                   | 1,988         | 1,022         | 7,765         | 3,328         | 4,132         | 10,627        | 7,198         | 7,854         | 21,130         | 20,403         | 10,000         | 2,095         | 1,765         | 2,861         | 102,169          |
| 8 Detroit                         | -             | -             | -             | 3,751         | -             | -             | -             | -             | 32,777         | 17,510         | -              | -             | -             | -             | 54,039           |
| 9 Dexter                          | 3,861         | 5,046         | 1,307         | 1,106         | 1,398         | 1,544         | 1,784         | 1,873         | 5,677          | 5,055          | 1,953          | 718           | 859           | 3,633         | 35,815           |
| 10 Foster                         | 2,025         | 2,428         | 4,486         | 1,362         | 2,721         | 6,815         | 3,426         | 3,496         | 7,912          | 6,992          | 2,022          | 853           | 904           | 2,168         | 47,610           |
| 11 Green Peter                    | 6,034         | 6,208         | -             | 2,535         | 111           | -             | 12,506        | -             | 5,888          | -              | 3,140          | 689           | 2,626         | 7,064         | 46,800           |
| 12 Green Springs                  | 1,121         | 250           | 128           | 388           | 440           | 809           | 662           | 662           | 2,009          | 1,937          | 1,960          | 899           | 959           | 1,811         | 14,036           |
| 13 Hills Creek                    | 7,100         | 8,626         | 1,673         | 1,259         | 1,360         | 1,698         | 4,213         | 4,758         | 12,040         | 10,640         | 4,554          | 1,199         | 1,261         | 8,406         | 68,788           |
| 14 Lookout Point                  | -             | -             | 3,019         | 2,555         | 3,406         | 4,815         | -             | -             | 9,336          | -              | -              | 2,909         | 3,465         | -             | 29,503           |
| 15 Lost Creek                     | 11,559        | 6,099         | 6,454         | 6,067         | 3,849         | 4,442         | 2,224         | 2,381         | 19,402         | 17,146         | 15,212         | 6,727         | 6,891         | 7,605         | 116,057          |
| 16 Minidoka                       | 2,142         | 735           | 736           | 732           | 660           | 736           | 1,622         | 1,622         | 7,780          | 7,019          | 6,982          | 2,944         | 3,140         | 3,490         | 40,340           |
| 17 Palisades                      | 14,596        | 3,491         | 3,602         | 3,573         | 3,839         | 8,894         | 8,055         | 8,055         | 48,141         | 47,051         | 40,872         | 22,171        | 23,649        | 17,614        | 253,603          |
| 18 Roza                           | 1,353         | 829           | 1,395         | 839           | 931           | 2,992         | 1,748         | 1,748         | 3,496          | 3,347          | 3,579          | 1,579         | 1,684         | 2,437         | 27,957           |
| <b>Total Independent Hydro</b>    |               |               |               |               |               |               |               |               |                |                |                |               |               |               |                  |
| 19 Federal Entities               | 68,738        | 50,945        | 39,222        | 35,092        | 31,158        | 55,329        | 53,243        | 42,961        | 201,604        | 168,410        | 114,436        | 53,062        | 58,250        | 73,315        | 1,045,765        |
| <b>20 Total Independent Hydro</b> | <b>68,738</b> | <b>50,945</b> | <b>39,222</b> | <b>35,092</b> | <b>31,158</b> | <b>55,329</b> | <b>53,243</b> | <b>42,961</b> | <b>201,604</b> | <b>168,410</b> | <b>114,436</b> | <b>53,062</b> | <b>58,250</b> | <b>73,315</b> | <b>1,045,765</b> |

**Table 3.2.3**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
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| A                                 | B             | C             | D             | E             | F             | G             | H             | I             | J              | K              | L              | M             | N             | O             | P                |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|---------------|------------------|
| LLH-MWh                           | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May            | Jun            | Jul            | Aug1          | Aug16         | Sep           | Sum              |
| <b>Independent Hydro</b>          |               |               |               |               |               |               |               |               |                |                |                |               |               |               |                  |
| 1 Anderson Ranch                  | 1,346         | 1,327         | 1,319         | 1,377         | 1,381         | 1,352         | 1,473         | 1,473         | 3,746          | 11,295         | 10,723         | 3,140         | 3,349         | 2,736         | 46,039           |
| 2 Big Cliff                       | 3,383         | 4,373         | 2,114         | 1,330         | 1,682         | 1,816         | 1,323         | 2,209         | 6,861          | 5,946          | 2,318          | 981           | 934           | 3,214         | 38,485           |
| 3 Black Canyon                    | 1,809         | 1,128         | 945           | 1,048         | 1,037         | 1,323         | 1,334         | 1,334         | 2,721          | 2,641          | 2,744          | 1,350         | 1,440         | 2,558         | 23,413           |
| 4 Boise River Diversion           | 250           | -             | -             | -             | -             | -             | 315           | 135           | 785            | 764            | 797            | 380           | 405           | 765           | 4,596            |
| 5 Chandler                        | 1,853         | 2,126         | 1,177         | 1,805         | 2,169         | 3,134         | 952           | 952           | 1,926          | 1,848          | 2,115          | 670           | 714           | 1,763         | 23,205           |
| 6 Cougar                          | 8,318         | 7,837         | 2,858         | 2,202         | 1,784         | 4,033         | 4,408         | 4,408         | 9,976          | 8,816          | 5,464          | 4,256         | 3,737         | 5,188         | 73,285           |
| 7 Cowlitz Falls                   | 1,988         | 1,022         | 7,765         | 3,328         | 3,990         | 10,627        | 7,198         | 7,854         | 21,130         | 20,403         | 10,000         | 2,095         | 1,765         | 2,861         | 102,026          |
| 8 Detroit                         | -             | -             | -             | 3,930         | -             | -             | -             | -             | 32,777         | 17,510         | -              | -             | -             | -             | 54,218           |
| 9 Dexter                          | 3,861         | 5,298         | 1,247         | 1,160         | 1,360         | 1,469         | 1,784         | 1,873         | 5,677          | 5,055          | 1,953          | 793           | 781           | 3,633         | 35,944           |
| 10 Foster                         | 2,025         | 2,549         | 4,277         | 1,429         | 2,647         | 6,481         | 3,426         | 3,496         | 7,912          | 6,992          | 2,022          | 943           | 822           | 2,168         | 47,189           |
| 11 Green Peter                    | 6,034         | 6,517         | -             | 2,659         | 108           | -             | 12,506        | -             | 5,888          | -              | 3,140          | 762           | 2,387         | 7,064         | 47,064           |
| 12 Green Springs                  | 1,121         | 250           | 128           | 388           | 425           | 809           | 662           | 662           | 2,009          | 1,937          | 1,960          | 899           | 959           | 1,811         | 14,021           |
| 13 Hills Creek                    | 7,100         | 9,056         | 1,596         | 1,320         | 1,323         | 1,615         | 4,213         | 4,758         | 12,040         | 10,640         | 4,554          | 1,325         | 1,146         | 8,406         | 69,093           |
| 14 Lookout Point                  | -             | -             | 2,878         | 2,679         | 3,314         | 4,579         | -             | -             | 9,336          | -              | -              | 3,215         | 3,150         | -             | 29,151           |
| 15 Lost Creek                     | 11,559        | 6,403         | 6,154         | 6,363         | 3,745         | 4,225         | 2,224         | 2,381         | 19,402         | 17,146         | 15,212         | 7,435         | 6,264         | 7,605         | 116,117          |
| 16 Minidoka                       | 2,142         | 735           | 736           | 732           | 637           | 736           | 1,622         | 1,622         | 7,780          | 7,019          | 6,982          | 2,944         | 3,140         | 3,490         | 40,317           |
| 17 Palisades                      | 14,596        | 3,491         | 3,602         | 3,573         | 3,706         | 8,894         | 8,055         | 8,055         | 48,141         | 47,051         | 40,872         | 22,171        | 23,649        | 17,614        | 253,470          |
| 18 Roza                           | 1,353         | 829           | 1,395         | 839           | 898           | 2,992         | 1,748         | 1,748         | 3,496          | 3,347          | 3,579          | 1,579         | 1,684         | 2,437         | 27,925           |
| <b>Total Independent Hydro</b>    |               |               |               |               |               |               |               |               |                |                |                |               |               |               |                  |
| 19 Federal Entities               | 68,738        | 52,941        | 38,191        | 36,161        | 30,206        | 54,083        | 53,243        | 42,961        | 201,604        | 168,410        | 114,436        | 54,940        | 56,328        | 73,315        | 1,045,556        |
| <b>20 Total Independent Hydro</b> | <b>68,738</b> | <b>52,941</b> | <b>38,191</b> | <b>36,161</b> | <b>30,206</b> | <b>54,083</b> | <b>53,243</b> | <b>42,961</b> | <b>201,604</b> | <b>168,410</b> | <b>114,436</b> | <b>54,940</b> | <b>56,328</b> | <b>73,315</b> | <b>1,045,556</b> |

**Table 3.2.4**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
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|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1Hr-MW                            | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        |
| <b>Independent Hydro</b>          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 Anderson Ranch                  | 4.19       | 4.36       | 4.27       | 4.31       | 4.76       | 4.31       | 9.41       | 9.41       | 11.8       | 37.0       | 33.2       | 20.1       | 20.1       | 8.78       |
| 2 Big Cliff                       | 10.8       | 13.0       | 6.45       | 3.86       | 5.84       | 5.84       | 8.70       | 14.5       | 19.9       | 19.6       | 7.07       | 5.84       | 5.84       | 10.0       |
| 3 Black Canyon                    | 5.45       | 3.61       | 2.98       | 3.27       | 3.53       | 4.19       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.31       |
| 4 Boise River Diversion           | 0.73       | 0          | 0          | 0          | 0          | 0          | 0.88       | 0.88       | 2.50       | 2.50       | 2.50       | 2.46       | 2.46       | 2.50       |
| 5 Chandler                        | 5.70       | 7.34       | 3.38       | 5.51       | 7.47       | 9.80       | 6.06       | 6.06       | 5.97       | 5.80       | 6.09       | 4.60       | 4.60       | 5.59       |
| 6 Cougar                          | 26.7       | 23.3       | 8.71       | 6.40       | 6.19       | 13.0       | 29.0       | 29.0       | 29.0       | 29.0       | 16.7       | 25.3       | 23.4       | 16.2       |
| 7 Cowlitz Falls                   | 6.20       | 3.10       | 23.1       | 10.00      | 13.7       | 33.3       | 46.1       | 50.3       | 63.6       | 66.3       | 28.9       | 13.3       | 10.5       | 9.50       |
| 8 Detroit                         | 115        | 115        | 96.0       | 96.0       | 115        | 115        | 115        | 115        | 115        | 115        | 115        | 115        | 115        | 115        |
| 9 Dexter                          | 12.4       | 15.7       | 3.80       | 3.37       | 4.72       | 4.72       | 11.7       | 12.3       | 16.5       | 16.6       | 5.95       | 4.72       | 4.88       | 11.4       |
| 10 Foster                         | 6.49       | 7.56       | 13.0       | 4.15       | 9.19       | 20.8       | 22.5       | 23.0       | 23.0       | 23.0       | 6.17       | 5.61       | 5.14       | 6.77       |
| 11 Green Peter                    | 19.3       | 19.3       | 93.0       | 7.73       | 0.37       | 93.0       | 93.0       | 93.0       | 93.0       | 93.0       | 9.57       | 4.54       | 14.9       | 22.1       |
| 12 Green Springs                  | 5.02       | 5.95       | 6.34       | 6.94       | 6.74       | 7.97       | 8.26       | 8.26       | 8.78       | 8.98       | 8.01       | 7.94       | 7.94       | 6.91       |
| 13 Hills Creek                    | 22.8       | 26.9       | 4.86       | 3.84       | 4.59       | 5.19       | 27.7       | 31.3       | 35.0       | 35.0       | 13.9       | 7.89       | 7.16       | 26.3       |
| 14 Lookout Point                  | 138        | 138        | 8.78       | 7.79       | 11.5       | 14.7       | 138        | 138        | 138        | 138        | 138        | 19.1       | 19.7       | 138        |
| 15 Lost Creek                     | 37.0       | 19.0       | 18.8       | 18.5       | 13.0       | 13.6       | 14.6       | 15.7       | 56.4       | 56.4       | 46.4       | 44.3       | 39.2       | 23.8       |
| 16 Minidoka                       | 6.48       | 2.40       | 2.32       | 2.32       | 2.57       | 2.32       | 10.3       | 10.3       | 24.6       | 22.7       | 21.7       | 19.0       | 19.0       | 11.5       |
| 17 Palisades                      | 45.5       | 11.3       | 11.2       | 11.4       | 12.8       | 28.2       | 51.7       | 51.7       | 152        | 151        | 127        | 144        | 144        | 56.9       |
| 18 Roza                           | 4.08       | 1.15       | 4.09       | 2.59       | 3.12       | 9.41       | 11.4       | 11.4       | 10.8       | 10.9       | 10.6       | 10.5       | 10.5       | 3.39       |
| <b>Total Independent Hydro</b>    |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 19 Federal Entities               | 472        | 417        | 311        | 198        | 225        | 385        | 613        | 629        | 815        | 840        | 605        | 463        | 463        | 483        |
| <b>20 Total Independent Hydro</b> | <b>472</b> | <b>417</b> | <b>311</b> | <b>198</b> | <b>225</b> | <b>385</b> | <b>613</b> | <b>629</b> | <b>815</b> | <b>840</b> | <b>605</b> | <b>463</b> | <b>463</b> | <b>483</b> |

**Table 3.2.4**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
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|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1Hr-MW                            | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        |
| <b>Independent Hydro</b>          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 1 Anderson Ranch                  | 4.19       | 4.36       | 4.27       | 4.31       | 4.76       | 4.31       | 9.41       | 9.41       | 11.8       | 37.0       | 33.2       | 20.1       | 20.1       | 8.78       |
| 2 Big Cliff                       | 10.8       | 13.0       | 6.45       | 3.86       | 5.84       | 5.84       | 8.70       | 14.5       | 19.9       | 19.6       | 7.07       | 5.84       | 5.84       | 10.0       |
| 3 Black Canyon                    | 5.45       | 3.61       | 2.98       | 3.27       | 3.53       | 4.19       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.53       | 8.31       |
| 4 Boise River Diversion           | 0.73       | 0          | 0          | 0          | 0          | 0          | 0.88       | 0.88       | 2.50       | 2.50       | 2.50       | 2.46       | 2.46       | 2.50       |
| 5 Chandler                        | 5.70       | 7.34       | 3.38       | 5.51       | 7.47       | 9.80       | 6.06       | 6.06       | 5.97       | 5.80       | 6.09       | 4.60       | 4.60       | 5.59       |
| 6 Cougar                          | 26.7       | 23.3       | 8.71       | 6.40       | 6.19       | 13.0       | 29.0       | 29.0       | 29.0       | 29.0       | 16.7       | 25.3       | 23.4       | 16.2       |
| 7 Cowlitz Falls                   | 6.20       | 3.10       | 23.1       | 10.00      | 13.7       | 33.3       | 46.1       | 50.3       | 63.6       | 66.3       | 28.9       | 13.3       | 10.5       | 9.50       |
| 8 Detroit                         | 115        | 115        | 96.0       | 96.0       | 115        | 115        | 115        | 115        | 115        | 115        | 115        | 115        | 115        | 115        |
| 9 Dexter                          | 12.4       | 15.7       | 3.80       | 3.37       | 4.72       | 4.72       | 11.7       | 12.3       | 16.5       | 16.6       | 5.95       | 4.72       | 4.88       | 11.4       |
| 10 Foster                         | 6.49       | 7.56       | 13.0       | 4.15       | 9.19       | 20.8       | 22.5       | 23.0       | 23.0       | 23.0       | 6.17       | 5.61       | 5.14       | 6.77       |
| 11 Green Peter                    | 19.3       | 19.3       | 93.0       | 7.73       | 0.37       | 93.0       | 93.0       | 93.0       | 93.0       | 93.0       | 9.57       | 4.54       | 14.9       | 22.1       |
| 12 Green Springs                  | 5.02       | 5.95       | 6.34       | 6.94       | 6.74       | 7.97       | 8.26       | 8.26       | 8.78       | 8.98       | 8.01       | 7.94       | 7.94       | 6.91       |
| 13 Hills Creek                    | 22.8       | 26.9       | 4.86       | 3.84       | 4.59       | 5.19       | 27.7       | 31.3       | 35.0       | 35.0       | 13.9       | 7.89       | 7.16       | 26.3       |
| 14 Lookout Point                  | 138        | 138        | 8.78       | 7.79       | 11.5       | 14.7       | 138        | 138        | 138        | 138        | 138        | 19.1       | 19.7       | 138        |
| 15 Lost Creek                     | 37.0       | 19.0       | 18.8       | 18.5       | 13.0       | 13.6       | 14.6       | 15.7       | 56.4       | 56.4       | 46.4       | 44.3       | 39.2       | 23.8       |
| 16 Minidoka                       | 6.48       | 2.40       | 2.32       | 2.32       | 2.57       | 2.32       | 10.3       | 10.3       | 24.6       | 22.7       | 21.7       | 19.0       | 19.0       | 11.5       |
| 17 Palisades                      | 45.5       | 11.3       | 11.2       | 11.4       | 12.8       | 28.2       | 51.7       | 51.7       | 152        | 151        | 127        | 144        | 144        | 56.9       |
| 18 Roza                           | 4.08       | 1.15       | 4.09       | 2.59       | 3.12       | 9.41       | 11.4       | 11.4       | 10.8       | 10.9       | 10.6       | 10.5       | 10.5       | 3.39       |
| <b>Total Independent Hydro</b>    |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| 19 Federal Entities               | 472        | 417        | 311        | 198        | 225        | 385        | 613        | 629        | 815        | 840        | 605        | 463        | 463        | 483        |
| <b>20 Total Independent Hydro</b> | <b>472</b> | <b>417</b> | <b>311</b> | <b>198</b> | <b>225</b> | <b>385</b> | <b>613</b> | <b>629</b> | <b>815</b> | <b>840</b> | <b>605</b> | <b>463</b> | <b>463</b> | <b>483</b> |

**Table 3.3.1**  
**Bonneville Power Administration - Power Services: Small Hydro**  
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|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                     | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Small Hydro</b>             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 Dworshak-Clearwater Hatchery | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        |
| 2 Rocky Brook                  | 0.04        | 0.21        | 0.56        | 0.58        | 0.41        | 0.47        | 0.46        | 0.46        | 0.20        | 0.09        | 0.00        | 0.00        | 0.00        | 0           | 0.25        |
| <b>Total Small Hydro</b>       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 3 Federal Entities             | 2.67        | 2.84        | 3.19        | 3.21        | 3.04        | 3.10        | 3.09        | 3.09        | 2.83        | 2.72        | 2.63        | 2.63        | 2.63        | 2.63        | 2.88        |
| <b>4 Total Small Hydro</b>     | <b>2.67</b> | <b>2.84</b> | <b>3.19</b> | <b>3.21</b> | <b>3.04</b> | <b>3.10</b> | <b>3.09</b> | <b>3.09</b> | <b>2.83</b> | <b>2.72</b> | <b>2.63</b> | <b>2.63</b> | <b>2.63</b> | <b>2.63</b> | <b>2.88</b> |



**Table 3.3.1**  
**Bonneville Power Administration - Power Services: Small Hydro**  
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|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                     | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Small Hydro</b>             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 Dworshak-Clearwater Hatchery | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        | 2.63        |
| 2 Rocky Brook                  | 0.04        | 0.21        | 0.56        | 0.58        | 0.42        | 0.47        | 0.46        | 0.46        | 0.20        | 0.09        | 0.00        | 0.00        | 0.00        | 0           | 0.25        |
| <b>Total Small Hydro</b>       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 3 Federal Entities             | 2.67        | 2.84        | 3.19        | 3.21        | 3.05        | 3.10        | 3.09        | 3.09        | 2.83        | 2.72        | 2.63        | 2.63        | 2.63        | 2.63        | 2.88        |
| <b>4 Total Small Hydro</b>     | <b>2.67</b> | <b>2.84</b> | <b>3.19</b> | <b>3.21</b> | <b>3.05</b> | <b>3.10</b> | <b>3.09</b> | <b>3.09</b> | <b>2.83</b> | <b>2.72</b> | <b>2.63</b> | <b>2.63</b> | <b>2.63</b> | <b>2.63</b> | <b>2.88</b> |

**Table 3.3.2**  
**Bonneville Power Administration - Power Services: Small Hydro**  
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|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|--------------|--------------|--------------|------------|------------|--------------|---------------|
| HLH-MWh                        | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1       | Apr16      | May          | Jun          | Jul          | Aug1       | Aug16      | Sep          | Sum           |
| <b>Small Hydro</b>             |              |              |              |              |              |              |            |            |              |              |              |            |            |              |               |
| 1 Dworshak-Clearwater Hatchery | 1,136        | 1,052        | 1,052        | 1,094        | 1,052        | 1,094        | 547        | 547        | 1,052        | 1,094        | 1,094        | 547        | 547        | 1,052        | 12,961        |
| 2 Rocky Brook                  | 19.0         | 88.0         | 239.0        | 247.0        | 162.0        | 199.0        | 95.0       | 95.0       | 85.0         | 36.0         | 1.0          | 1.0        | 1.0        | -            | 1,268.0       |
| <b>Total Small Hydro</b>       |              |              |              |              |              |              |            |            |              |              |              |            |            |              |               |
| 3 Federal Entities             | 1,155        | 1,140        | 1,291        | 1,341        | 1,214        | 1,293        | 642        | 642        | 1,137        | 1,130        | 1,095        | 548        | 548        | 1,052        | 14,229        |
| <b>4 Total Small Hydro</b>     | <b>1,155</b> | <b>1,140</b> | <b>1,291</b> | <b>1,341</b> | <b>1,214</b> | <b>1,293</b> | <b>642</b> | <b>642</b> | <b>1,137</b> | <b>1,130</b> | <b>1,095</b> | <b>548</b> | <b>548</b> | <b>1,052</b> | <b>14,229</b> |

**Table 3.3.2**  
**Bonneville Power Administration - Power Services: Small Hydro**  
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|--------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|--------------|--------------|--------------|------------|------------|--------------|---------------|
| HLH-MWh                        | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1       | Apr16      | May          | Jun          | Jul          | Aug1       | Aug16      | Sep          | Sum           |
| <b>Small Hydro</b>             |              |              |              |              |              |              |            |            |              |              |              |            |            |              |               |
| 1 Dworshak-Clearwater Hatchery | 1,136        | 1,010        | 1,094        | 1,052        | 1,010        | 1,136        | 547        | 547        | 1,052        | 1,094        | 1,094        | 505        | 589        | 1,052        | 12,919        |
| 2 Rocky Brook                  | 19.0         | 88.0         | 239.0        | 247.0        | 162.0        | 199.0        | 95.0       | 95.0       | 85.0         | 36.0         | 1.0          | 1.0        | 1.0        | -            | 1,268.0       |
| <b>Total Small Hydro</b>       |              |              |              |              |              |              |            |            |              |              |              |            |            |              |               |
| 3 Federal Entities             | 1,155        | 1,098        | 1,333        | 1,299        | 1,172        | 1,335        | 642        | 642        | 1,137        | 1,130        | 1,095        | 506        | 590        | 1,052        | 14,187        |
| <b>4 Total Small Hydro</b>     | <b>1,155</b> | <b>1,098</b> | <b>1,333</b> | <b>1,299</b> | <b>1,172</b> | <b>1,335</b> | <b>642</b> | <b>642</b> | <b>1,137</b> | <b>1,130</b> | <b>1,095</b> | <b>506</b> | <b>590</b> | <b>1,052</b> | <b>14,187</b> |

**Table 3.3.3**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                              | B          | C          | D            | E            | F          | G            | H          | I          | J          | K          | L          | M          | N          | O          | P             |
|--------------------------------|------------|------------|--------------|--------------|------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|
| LLH-MWh                        | Oct        | Nov        | Dec          | Jan          | Feb        | Mar          | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Sum           |
| <b>Small Hydro</b>             |            |            |              |              |            |              |            |            |            |            |            |            |            |            |               |
| 1 Dworshak-Clearwater Hatchery | 821        | 844        | 905          | 863          | 778        | 860          | 400        | 400        | 905        | 800        | 863        | 400        | 463        | 842        | 10,141        |
| 2 Rocky Brook                  | 14.0       | 61.0       | 175.0        | 181.0        | 121.0      | 149.0        | 70.0       | 70.0       | 67.0       | 26.0       | 1.0        | -          | -          | -          | 935.0         |
| <b>Total Small Hydro</b>       |            |            |              |              |            |              |            |            |            |            |            |            |            |            |               |
| 3 Federal Entities             | 835        | 905        | 1,080        | 1,044        | 899        | 1,009        | 470        | 470        | 972        | 826        | 864        | 400        | 463        | 842        | 11,076        |
| <b>4 Total Small Hydro</b>     | <b>835</b> | <b>905</b> | <b>1,080</b> | <b>1,044</b> | <b>899</b> | <b>1,009</b> | <b>470</b> | <b>470</b> | <b>972</b> | <b>826</b> | <b>864</b> | <b>400</b> | <b>463</b> | <b>842</b> | <b>11,076</b> |

**Table 3.3.3**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                              | B          | C          | D            | E            | F          | G          | H          | I          | J          | K          | L          | M          | N          | O          | P             |
|--------------------------------|------------|------------|--------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|
| LLH-MWh                        | Oct        | Nov        | Dec          | Jan          | Feb        | Mar        | Apr1       | Apr16      | May        | Jun        | Jul        | Aug1       | Aug16      | Sep        | Sum           |
| <b>Small Hydro</b>             |            |            |              |              |            |            |            |            |            |            |            |            |            |            |               |
| 1 Dworshak-Clearwater Hatchery | 821        | 886        | 863          | 905          | 757        | 818        | 400        | 400        | 905        | 800        | 863        | 442        | 421        | 842        | 10,120        |
| 2 Rocky Brook                  | 14.0       | 61.0       | 175.0        | 181.0        | 121.0      | 149.0      | 70.0       | 70.0       | 67.0       | 26.0       | 1.0        | -          | -          | -          | 935.0         |
| <b>Total Small Hydro</b>       |            |            |              |              |            |            |            |            |            |            |            |            |            |            |               |
| 3 Federal Entities             | 835        | 947        | 1,038        | 1,086        | 878        | 967        | 470        | 470        | 972        | 826        | 864        | 442        | 421        | 842        | 11,055        |
| <b>4 Total Small Hydro</b>     | <b>835</b> | <b>947</b> | <b>1,038</b> | <b>1,086</b> | <b>878</b> | <b>967</b> | <b>470</b> | <b>470</b> | <b>972</b> | <b>826</b> | <b>864</b> | <b>442</b> | <b>421</b> | <b>842</b> | <b>11,055</b> |

**Table 3.3.4**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                              | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1Hr-MW                         | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         |
| <b>Small Hydro</b>             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 Dworshak-Clearwater Hatchery | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        |
| 2 Rocky Brook                  | 1.11        | 1.49        | 1.60        | 1.59        | 1.62        | 1.58        | 1.58        | 1.58        | 1.58        | 1.09        | 0.19        | 0.49        | 0.49        | 0           |
| <b>Total Small Hydro</b>       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 3 Federal Entities             | 4.11        | 4.49        | 4.60        | 4.59        | 4.62        | 4.58        | 4.58        | 4.58        | 4.58        | 4.09        | 3.19        | 3.49        | 3.49        | 3.00        |
| <b>4 Total Small Hydro</b>     | <b>4.11</b> | <b>4.49</b> | <b>4.60</b> | <b>4.59</b> | <b>4.62</b> | <b>4.58</b> | <b>4.58</b> | <b>4.58</b> | <b>4.58</b> | <b>4.09</b> | <b>3.19</b> | <b>3.49</b> | <b>3.49</b> | <b>3.00</b> |

**Table 3.3.4**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| A                              | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1Hr-MW                         | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         |
| <b>Small Hydro</b>             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 Dworshak-Clearwater Hatchery | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        | 3.00        |
| 2 Rocky Brook                  | 1.11        | 1.49        | 1.60        | 1.59        | 1.62        | 1.58        | 1.58        | 1.58        | 1.58        | 1.09        | 0.19        | 0.49        | 0.49        | 0           |
| <b>Total Small Hydro</b>       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 3 Federal Entities             | 4.11        | 4.49        | 4.60        | 4.59        | 4.62        | 4.58        | 4.58        | 4.58        | 4.58        | 4.09        | 3.19        | 3.49        | 3.49        | 3.00        |
| <b>4 Total Small Hydro</b>     | <b>4.11</b> | <b>4.49</b> | <b>4.60</b> | <b>4.59</b> | <b>4.62</b> | <b>4.58</b> | <b>4.58</b> | <b>4.58</b> | <b>4.58</b> | <b>4.09</b> | <b>3.19</b> | <b>3.49</b> | <b>3.49</b> | <b>3.00</b> |

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**4. OTHER RESOURCE FORECASTS FOR FY 2020 AND FY 2021 .....63**

**Table 4.1.1**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
 S183-RC-20190515-110000

| A                                    | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                           | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Large Thermal Resources</b>       |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1 Columbia Generating Station        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        |
| <b>Total Large Thermal Resources</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 2 Federal Entities                   | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        |
| <b>3 Total</b>                       | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> |

**Table 4.1.1**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B            | C            | D            | E            | F            | G            | H            | I            | J          | K          | L            | M            | N            | O            | P          |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|--------------|--------------|--------------|--------------|------------|
| Energy-aMW                           | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May        | Jun        | Jul          | Aug1         | Aug16        | Sep          | Avg        |
| <b>Large Thermal Resources</b>       |              |              |              |              |              |              |              |              |            |            |              |              |              |              |            |
| 1 Columbia Generating Station        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 360        | 409        | 1,116        | 1,116        | 1,116        | 1,116        | 994        |
| <b>Total Large Thermal Resources</b> |              |              |              |              |              |              |              |              |            |            |              |              |              |              |            |
| 2 Federal Entities                   | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        | 360        | 409        | 1,116        | 1,116        | 1,116        | 1,116        | 994        |
| <b>3 Total</b>                       | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>360</b> | <b>409</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>1,116</b> | <b>994</b> |

**Table 4.1.2**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B              | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N              | O              | P                |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| HLH-MWh                              | Oct            | Nov            | Dec            | Jan            | Feb            | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Large Thermal Resources</b>       |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 1 Columbia Generating Station        | 482,112        | 446,400        | 446,400        | 464,256        | 446,400        | 464,256        | 232,128        | 232,128        | 446,400        | 464,256        | 464,256        | 232,128        | 232,128        | 446,400        | 5,499,648        |
| <b>Total Large Thermal Resources</b> |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 2 Federal Entities                   | 482,112        | 446,400        | 446,400        | 464,256        | 446,400        | 464,256        | 232,128        | 232,128        | 446,400        | 464,256        | 464,256        | 232,128        | 232,128        | 446,400        | 5,499,648        |
| <b>3 Total</b>                       | <b>482,112</b> | <b>446,400</b> | <b>446,400</b> | <b>464,256</b> | <b>446,400</b> | <b>464,256</b> | <b>232,128</b> | <b>232,128</b> | <b>446,400</b> | <b>464,256</b> | <b>464,256</b> | <b>232,128</b> | <b>232,128</b> | <b>446,400</b> | <b>5,499,648</b> |

**Table 4.1.2**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B              | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N              | O              | P                |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| HLH-MWh                              | Oct            | Nov            | Dec            | Jan            | Feb            | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Large Thermal Resources</b>       |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 1 Columbia Generating Station        | 482,112        | 428,544        | 464,256        | 446,400        | 428,544        | 482,112        | 232,128        | 232,128        | 144,000        | 170,144        | 464,256        | 214,272        | 249,984        | 446,400        | 4,885,280        |
| <b>Total Large Thermal Resources</b> |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 2 Federal Entities                   | 482,112        | 428,544        | 464,256        | 446,400        | 428,544        | 482,112        | 232,128        | 232,128        | 144,000        | 170,144        | 464,256        | 214,272        | 249,984        | 446,400        | 4,885,280        |
| <b>3 Total</b>                       | <b>482,112</b> | <b>428,544</b> | <b>464,256</b> | <b>446,400</b> | <b>428,544</b> | <b>482,112</b> | <b>232,128</b> | <b>232,128</b> | <b>144,000</b> | <b>170,144</b> | <b>464,256</b> | <b>214,272</b> | <b>249,984</b> | <b>446,400</b> | <b>4,885,280</b> |

**Table 4.1.3**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B              | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N              | O              | P                |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| LLH-MWh                              | Oct            | Nov            | Dec            | Jan            | Feb            | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Large Thermal Resources</b>       |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 1 Columbia Generating Station        | 348,192        | 358,236        | 383,904        | 366,048        | 330,336        | 364,932        | 169,632        | 169,632        | 383,904        | 339,264        | 366,048        | 169,632        | 196,416        | 357,120        | 4,303,296        |
| <b>Total Large Thermal Resources</b> |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 2 Federal Entities                   | 348,192        | 358,236        | 383,904        | 366,048        | 330,336        | 364,932        | 169,632        | 169,632        | 383,904        | 339,264        | 366,048        | 169,632        | 196,416        | 357,120        | 4,303,296        |
| <b>3 Total</b>                       | <b>348,192</b> | <b>358,236</b> | <b>383,904</b> | <b>366,048</b> | <b>330,336</b> | <b>364,932</b> | <b>169,632</b> | <b>169,632</b> | <b>383,904</b> | <b>339,264</b> | <b>366,048</b> | <b>169,632</b> | <b>196,416</b> | <b>357,120</b> | <b>4,303,296</b> |

**Table 4.1.3**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B              | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N              | O              | P                |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| LLH-MWh                              | Oct            | Nov            | Dec            | Jan            | Feb            | Mar            | Apr1           | Apr16          | May            | Jun            | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Large Thermal Resources</b>       |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 1 Columbia Generating Station        | 348,192        | 376,092        | 366,048        | 383,904        | 321,408        | 347,076        | 169,632        | 169,632        | 123,840        | 124,336        | 366,048        | 187,488        | 178,560        | 357,120        | 3,819,376        |
| <b>Total Large Thermal Resources</b> |                |                |                |                |                |                |                |                |                |                |                |                |                |                |                  |
| 2 Federal Entities                   | 348,192        | 376,092        | 366,048        | 383,904        | 321,408        | 347,076        | 169,632        | 169,632        | 123,840        | 124,336        | 366,048        | 187,488        | 178,560        | 357,120        | 3,819,376        |
| <b>3 Total</b>                       | <b>348,192</b> | <b>376,092</b> | <b>366,048</b> | <b>383,904</b> | <b>321,408</b> | <b>347,076</b> | <b>169,632</b> | <b>169,632</b> | <b>123,840</b> | <b>124,336</b> | <b>366,048</b> | <b>187,488</b> | <b>178,560</b> | <b>357,120</b> | <b>3,819,376</b> |

**Table 4.1.4**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1Hr-MW                               | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          |
| <b>Large Thermal Resources</b>       |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 1 Columbia Generating Station        | 1,181        | 1,179        | 1,180        | 1,169        | 1,169        | 1,169        | 1,160        | 1,160        | 1,151        | 1,154        | 1,168        | 1,163        | 1,163        | 1,179        |
| <b>Total Large Thermal Resources</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| 2 Federal Entities                   | 1,181        | 1,179        | 1,180        | 1,169        | 1,169        | 1,169        | 1,160        | 1,160        | 1,151        | 1,154        | 1,168        | 1,163        | 1,163        | 1,179        |
| <b>3 Total</b>                       | <b>1,181</b> | <b>1,179</b> | <b>1,180</b> | <b>1,169</b> | <b>1,169</b> | <b>1,169</b> | <b>1,160</b> | <b>1,160</b> | <b>1,151</b> | <b>1,154</b> | <b>1,168</b> | <b>1,163</b> | <b>1,163</b> | <b>1,179</b> |



**Table 4.1.4**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                    | B            | C            | D            | E            | F            | G            | H            | I            | J        | K        | L            | M            | N            | O            |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------|----------|--------------|--------------|--------------|--------------|
| 1Hr-MW                               | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May      | Jun      | Jul          | Aug1         | Aug16        | Sep          |
| <b>Large Thermal Resources</b>       |              |              |              |              |              |              |              |              |          |          |              |              |              |              |
| 1 Columbia Generating Station        | 1,181        | 1,179        | 1,180        | 1,169        | 1,169        | 1,169        | 1,160        | 1,160        | -        | -        | 1,168        | 1,163        | 1,163        | 1,179        |
| <b>Total Large Thermal Resources</b> |              |              |              |              |              |              |              |              |          |          |              |              |              |              |
| 2 Federal Entities                   | 1,181        | 1,179        | 1,180        | 1,169        | 1,169        | 1,169        | 1,160        | 1,160        | -        | -        | 1,168        | 1,163        | 1,163        | 1,179        |
| <b>3 Total</b>                       | <b>1,181</b> | <b>1,179</b> | <b>1,180</b> | <b>1,169</b> | <b>1,169</b> | <b>1,169</b> | <b>1,160</b> | <b>1,160</b> | <b>-</b> | <b>-</b> | <b>1,168</b> | <b>1,163</b> | <b>1,163</b> | <b>1,179</b> |

**Table 4.2.1**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
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| A                                | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           | P           |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                       | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Renewable Resources</b>       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 Ashland Solar Project          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 0           | 0           | 0           | 0           | 0.00        |
| 2 Condon Wind                    | 8.98        | 12.9        | 9.81        | 5.25        | 8.68        | 9.98        | 17.8        | 15.0        | 16.1        | 15.9        | 15.5        | 8.02        | 12.0        | 11.2        | 11.7        |
| 3 Foote Creek 1 Wind             | 2.76        | 3.96        | 3.02        | 1.61        | 2.67        | 3.07        | 5.49        | 4.62        | 4.94        | 4.88        | 4.77        | 2.47        | 3.70        | 3.44        | 3.60        |
| 4 Foote Creek 4 Wind             | 3.03        | 4.34        | 3.31        | 1.77        | 2.93        | 3.37        | 6.02        | 5.07        | 5.42        | 5.36        | 5.24        | 2.70        | 4.06        | 3.77        | 3.95        |
| 5 Fourmile Hill Geothermal       | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 6 Klondike Wind 1                | 4.33        | 6.20        | 4.73        | 2.53        | 4.18        | 4.81        | 8.60        | 7.24        | 7.74        | 7.65        | 7.48        | 3.86        | 5.80        | 5.39        | 5.65        |
| 7 Klondike Wind 3                | 9.03        | 12.9        | 9.86        | 5.28        | 8.73        | 10.0        | 17.9        | 15.1        | 16.2        | 16.0        | 15.6        | 8.06        | 12.1        | 11.2        | 11.8        |
| 8 Stateline Wind                 | 16.2        | 23.3        | 17.7        | 9.49        | 15.7        | 18.0        | 32.3        | 27.2        | 29.1        | 28.7        | 28.1        | 14.5        | 21.8        | 20.2        | 21.2        |
| <b>Total Renewable Resources</b> |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 9 Federal Entities               | 44.4        | 63.6        | 48.5        | 25.9        | 42.9        | 49.3        | 88.2        | 74.2        | 79.4        | 78.5        | 76.7        | 39.6        | 59.4        | 55.2        | 57.9        |
| <b>10 Total</b>                  | <b>44.4</b> | <b>63.6</b> | <b>48.5</b> | <b>25.9</b> | <b>42.9</b> | <b>49.3</b> | <b>88.2</b> | <b>74.2</b> | <b>79.4</b> | <b>78.5</b> | <b>76.7</b> | <b>39.6</b> | <b>59.4</b> | <b>55.2</b> | <b>57.9</b> |

**Table 4.2.1**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2021**  
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| A                                | B           | C           | D           | E           | F           | G           | H           | I           | J           | K           | L           | M           | N           | O           | P           |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Energy-aMW                       | Oct         | Nov         | Dec         | Jan         | Feb         | Mar         | Apr1        | Apr16       | May         | Jun         | Jul         | Aug1        | Aug16       | Sep         | Avg         |
| <b>Renewable Resources</b>       |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 1 Ashland Solar Project          | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 2 Condon Wind                    | 8.98        | 12.9        | 9.81        | 5.25        | 8.68        | 9.98        | 17.8        | 15.0        | 16.1        | 15.9        | 15.5        | 8.02        | 12.0        | 11.2        | 11.7        |
| 3 Foote Creek 1 Wind             | 2.76        | 3.96        | 3.02        | 1.61        | 2.67        | 3.07        | 5.49        | 4.62        | 4.94        | 4.88        | 4.77        | 2.47        | 3.70        | 3.44        | 3.61        |
| 4 Foote Creek 4 Wind             | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 5 Fourmile Hill Geothermal       | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           | 0           |
| 6 Klondike Wind 1                | 4.33        | 6.20        | 4.73        | 2.53        | 4.18        | 4.81        | 8.60        | 7.24        | 7.74        | 7.65        | 7.48        | 3.86        | 5.80        | 5.39        | 5.65        |
| 7 Klondike Wind 3                | 9.03        | 12.9        | 9.86        | 5.28        | 8.73        | 10.0        | 17.9        | 15.1        | 16.2        | 16.0        | 15.6        | 8.06        | 12.1        | 11.2        | 11.8        |
| 8 Stateline Wind                 | 16.2        | 23.3        | 17.7        | 9.49        | 15.7        | 18.0        | 32.3        | 27.2        | 29.1        | 28.7        | 28.1        | 14.5        | 21.8        | 20.2        | 21.2        |
| <b>Total Renewable Resources</b> |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| 9 Federal Entities               | 41.3        | 59.2        | 45.2        | 24.2        | 40.0        | 45.9        | 82.2        | 69.1        | 74.0        | 73.1        | 71.5        | 36.9        | 55.4        | 51.4        | 54.0        |
| <b>10 Total</b>                  | <b>41.3</b> | <b>59.2</b> | <b>45.2</b> | <b>24.2</b> | <b>40.0</b> | <b>45.9</b> | <b>82.2</b> | <b>69.1</b> | <b>74.0</b> | <b>73.1</b> | <b>71.5</b> | <b>36.9</b> | <b>55.4</b> | <b>51.4</b> | <b>54.0</b> |

**Table 4.2.2**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2020**  
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| A                                | B             | C             | D             | E             | F             | G             | H             | I             | J             | K             | L             | M            | N             | O             | P              |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|----------------|
| HLH-MWh                          | Oct           | Nov           | Dec           | Jan           | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1         | Aug16         | Sep           | Sum            |
| <b>Renewable Resources</b>       |               |               |               |               |               |               |               |               |               |               |               |              |               |               |                |
| 1 Ashland Solar Project          | 2             | 1             | 1             | 1             | 1             | 2             | 1             | 1             | 3             | 3             | -             | -            | -             | -             | 17             |
| 2 Condon Wind                    | 3,594         | 4,119         | 3,700         | 2,037         | 3,751         | 4,396         | 3,867         | 3,259         | 6,680         | 6,551         | 6,398         | 1,535        | 2,623         | 4,803         | 57,312         |
| 3 Foote Creek 1 Wind             | 1,105         | 1,267         | 1,138         | 627           | 1,154         | 1,352         | 1,190         | 1,003         | 2,055         | 2,015         | 1,968         | 472          | 807           | 1,477         | 17,629         |
| 4 Foote Creek 4 Wind             | 1,212         | 1,390         | 1,248         | 687           | 1,266         | 1,483         | 1,305         | 1,100         | 2,253         | 2,210         | 2,159         | 518          | 885           | 1,620         | 19,335         |
| 5 Fourmile Hill Geothermal       | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -             | -            | -             | -             | -              |
| 6 Klondike Wind 1                | 1,732         | 1,985         | 1,783         | 982           | 1,808         | 2,118         | 1,864         | 1,571         | 3,219         | 3,157         | 3,083         | 740          | 1,264         | 2,315         | 27,621         |
| 7 Klondike Wind 3                | 3,614         | 4,143         | 3,721         | 2,049         | 3,772         | 4,421         | 3,890         | 3,278         | 6,718         | 6,589         | 6,435         | 1,544        | 2,638         | 4,830         | 57,643         |
| 8 Stateline Wind                 | 6,501         | 7,451         | 6,693         | 3,685         | 6,785         | 7,953         | 6,996         | 5,896         | 12,084        | 11,852        | 11,575        | 2,777        | 4,744         | 8,688         | 103,681        |
| <b>Total Renewable Resources</b> |               |               |               |               |               |               |               |               |               |               |               |              |               |               |                |
| 9 Federal Entities               | 17,761        | 20,356        | 18,284        | 10,067        | 18,537        | 21,725        | 19,112        | 16,108        | 33,012        | 32,378        | 31,618        | 7,586        | 12,960        | 23,733        | 283,238        |
| <b>10 Total</b>                  | <b>17,761</b> | <b>20,356</b> | <b>18,284</b> | <b>10,067</b> | <b>18,537</b> | <b>21,725</b> | <b>19,112</b> | <b>16,108</b> | <b>33,012</b> | <b>32,378</b> | <b>31,618</b> | <b>7,586</b> | <b>12,960</b> | <b>23,733</b> | <b>283,238</b> |

**Table 4.2.2**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                | B             | C             | D             | E            | F             | G             | H             | I             | J             | K             | L             | M            | N             | O             | P              |
|----------------------------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|----------------|
| HLH-MWh                          | Oct           | Nov           | Dec           | Jan          | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1         | Aug16         | Sep           | Sum            |
| <b>Renewable Resources</b>       |               |               |               |              |               |               |               |               |               |               |               |              |               |               |                |
| 1 Ashland Solar Project          | -             | -             | -             | -            | -             | -             | -             | -             | -             | -             | -             | -            | -             | -             | -              |
| 2 Condon Wind                    | 3,594         | 4,119         | 3,700         | 2,037        | 3,621         | 4,396         | 3,867         | 3,259         | 6,680         | 6,551         | 6,398         | 1,535        | 2,623         | 4,803         | 57,183         |
| 3 Foote Creek 1 Wind             | 1,105         | 1,267         | 1,138         | 627          | 1,114         | 1,352         | 1,190         | 1,003         | 2,055         | 2,015         | 1,968         | 472          | 807           | 1,477         | 17,589         |
| 4 Foote Creek 4 Wind             | -             | -             | -             | -            | -             | -             | -             | -             | -             | -             | -             | -            | -             | -             | -              |
| 5 Fourmile Hill Geothermal       | -             | -             | -             | -            | -             | -             | -             | -             | -             | -             | -             | -            | -             | -             | -              |
| 6 Klondike Wind 1                | 1,732         | 1,985         | 1,783         | 982          | 1,745         | 2,118         | 1,864         | 1,571         | 3,219         | 3,157         | 3,083         | 740          | 1,264         | 2,315         | 27,558         |
| 7 Klondike Wind 3                | 3,614         | 4,143         | 3,721         | 2,049        | 3,642         | 4,421         | 3,890         | 3,278         | 6,718         | 6,589         | 6,435         | 1,544        | 2,638         | 4,830         | 57,513         |
| 8 Stateline Wind                 | 6,501         | 7,451         | 6,693         | 3,685        | 6,551         | 7,953         | 6,996         | 5,896         | 12,084        | 11,852        | 11,575        | 2,777        | 4,744         | 8,688         | 103,447        |
| <b>Total Renewable Resources</b> |               |               |               |              |               |               |               |               |               |               |               |              |               |               |                |
| 9 Federal Entities               | 16,547        | 18,965        | 17,034        | 9,379        | 16,674        | 20,240        | 17,806        | 15,007        | 30,756        | 30,165        | 29,459        | 7,068        | 12,075        | 22,113        | 263,291        |
| <b>10 Total</b>                  | <b>16,547</b> | <b>18,965</b> | <b>17,034</b> | <b>9,379</b> | <b>16,674</b> | <b>20,240</b> | <b>17,806</b> | <b>15,007</b> | <b>30,756</b> | <b>30,165</b> | <b>29,459</b> | <b>7,068</b> | <b>12,075</b> | <b>22,113</b> | <b>263,291</b> |

**Table 4.2.3**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2020**  
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| A                                | B             | C             | D             | E            | F             | G             | H             | I             | J             | K             | L             | M            | N            | O             | P              |
|----------------------------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|---------------|----------------|
| LLH-MWh                          | Oct           | Nov           | Dec           | Jan          | Feb           | Mar           | Apr1          | Apr16         | May           | Jun           | Jul           | Aug1         | Aug16        | Sep           | Sum            |
| <b>Renewable Resources</b>       |               |               |               |              |               |               |               |               |               |               |               |              |              |               |                |
| 1 Ashland Solar Project          | 0             | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 1             | 0             | -             | -            | -            | -             | 3              |
| 2 Condon Wind                    | 3,086         | 5,158         | 3,597         | 1,865        | 2,289         | 3,017         | 2,557         | 2,146         | 5,270         | 4,882         | 5,151         | 1,350        | 1,995        | 3,242         | 45,605         |
| 3 Foote Creek 1 Wind             | 949           | 1,586         | 1,107         | 574          | 704           | 928           | 786           | 660           | 1,621         | 1,502         | 1,584         | 415          | 614          | 997           | 14,028         |
| 4 Foote Creek 4 Wind             | 1,041         | 1,740         | 1,214         | 629          | 772           | 1,018         | 863           | 724           | 1,778         | 1,647         | 1,738         | 456          | 673          | 1,094         | 15,385         |
| 5 Fourmile Hill Geothermal       | -             | -             | -             | -            | -             | -             | -             | -             | -             | -             | -             | -            | -            | -             | -              |
| 6 Klondike Wind 1                | 1,487         | 2,486         | 1,734         | 899          | 1,103         | 1,454         | 1,232         | 1,034         | 2,540         | 2,353         | 2,482         | 651          | 961          | 1,563         | 21,979         |
| 7 Klondike Wind 3                | 3,104         | 5,188         | 3,618         | 1,876        | 2,302         | 3,035         | 2,571         | 2,158         | 5,300         | 4,910         | 5,181         | 1,358        | 2,006        | 3,261         | 45,868         |
| 8 Stateline Wind                 | 5,583         | 9,331         | 6,508         | 3,374        | 4,141         | 5,458         | 4,625         | 3,882         | 9,533         | 8,832         | 9,318         | 2,443        | 3,608        | 5,865         | 82,503         |
| <b>Total Renewable Resources</b> |               |               |               |              |               |               |               |               |               |               |               |              |              |               |                |
| 9 Federal Entities               | 15,251        | 25,489        | 17,778        | 9,218        | 11,312        | 14,910        | 12,635        | 10,605        | 26,042        | 24,127        | 25,454        | 6,673        | 9,857        | 16,021        | 225,372        |
| <b>10 Total</b>                  | <b>15,251</b> | <b>25,489</b> | <b>17,778</b> | <b>9,218</b> | <b>11,312</b> | <b>14,910</b> | <b>12,635</b> | <b>10,605</b> | <b>26,042</b> | <b>24,127</b> | <b>25,454</b> | <b>6,673</b> | <b>9,857</b> | <b>16,021</b> | <b>225,372</b> |

**Table 4.2.3**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
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| A                                | B             | C             | D             | E            | F             | G             | H             | I            | J             | K             | L             | M            | N            | O             | P              |
|----------------------------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------|--------------|---------------|----------------|
| LLH-MWh                          | Oct           | Nov           | Dec           | Jan          | Feb           | Mar           | Apr1          | Apr16        | May           | Jun           | Jul           | Aug1         | Aug16        | Sep           | Sum            |
| <b>Renewable Resources</b>       |               |               |               |              |               |               |               |              |               |               |               |              |              |               |                |
| 1 Ashland Solar Project          | -             | -             | -             | -            | -             | -             | -             | -            | -             | -             | -             | -            | -            | -             | -              |
| 2 Condon Wind                    | 3,086         | 5,158         | 3,597         | 1,865        | 2,210         | 3,017         | 2,557         | 2,146        | 5,270         | 4,882         | 5,151         | 1,350        | 1,995        | 3,242         | 45,527         |
| 3 Foote Creek 1 Wind             | 949           | 1,586         | 1,107         | 574          | 680           | 928           | 786           | 660          | 1,621         | 1,502         | 1,584         | 415          | 614          | 997           | 14,004         |
| 4 Foote Creek 4 Wind             | -             | -             | -             | -            | -             | -             | -             | -            | -             | -             | -             | -            | -            | -             | -              |
| 5 Fourmile Hill Geothermal       | -             | -             | -             | -            | -             | -             | -             | -            | -             | -             | -             | -            | -            | -             | -              |
| 6 Klondike Wind 1                | 1,487         | 2,486         | 1,734         | 899          | 1,065         | 1,454         | 1,232         | 1,034        | 2,540         | 2,353         | 2,482         | 651          | 961          | 1,563         | 21,941         |
| 7 Klondike Wind 3                | 3,104         | 5,188         | 3,618         | 1,876        | 2,223         | 3,035         | 2,571         | 2,158        | 5,300         | 4,910         | 5,181         | 1,358        | 2,006        | 3,261         | 45,789         |
| 8 Stateline Wind                 | 5,583         | 9,331         | 6,508         | 3,374        | 3,998         | 5,458         | 4,625         | 3,882        | 9,533         | 8,832         | 9,318         | 2,443        | 3,608        | 5,865         | 82,360         |
| <b>Total Renewable Resources</b> |               |               |               |              |               |               |               |              |               |               |               |              |              |               |                |
| 9 Federal Entities               | 14,209        | 23,749        | 16,564        | 8,589        | 10,176        | 13,892        | 11,772        | 9,880        | 24,264        | 22,479        | 23,716        | 6,218        | 9,184        | 14,927        | 209,620        |
| <b>10 Total</b>                  | <b>14,209</b> | <b>23,749</b> | <b>16,564</b> | <b>8,589</b> | <b>10,176</b> | <b>13,892</b> | <b>11,772</b> | <b>9,880</b> | <b>24,264</b> | <b>22,479</b> | <b>23,716</b> | <b>6,218</b> | <b>9,184</b> | <b>14,927</b> | <b>209,620</b> |

**Table 4.2.4**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2020**  
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| A                                | B        | C        | D        | E        | F        | G        | H        | I        | J        | K        | L        | M        | N        | O        |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1Hr-MW                           | Oct      | Nov      | Dec      | Jan      | Feb      | Mar      | Apr1     | Apr16    | May      | Jun      | Jul      | Aug1     | Aug16    | Sep      |
| <b>Renewable Resources</b>       |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| 1 Ashland Solar Project          | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 2 Condon Wind                    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 3 Foote Creek 1 Wind             | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4 Foote Creek 4 Wind             | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5 Fourmile Hill Geothermal       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 6 Klondike Wind 1                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7 Klondike Wind 3                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8 Stateline Wind                 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Total Renewable Resources</b> |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| 9 Federal Entities               | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>10 Total</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |



**Table 4.2.4**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                | B        | C        | D        | E        | F        | G        | H        | I        | J        | K        | L        | M        | N        | O        |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1Hr-MW                           | Oct      | Nov      | Dec      | Jan      | Feb      | Mar      | Apr1     | Apr16    | May      | Jun      | Jul      | Aug1     | Aug16    | Sep      |
| <b>Renewable Resources</b>       |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| 1 Ashland Solar Project          | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 2 Condon Wind                    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 3 Foote Creek 1 Wind             | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 4 Foote Creek 4 Wind             | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 5 Fourmile Hill Geothermal       | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 6 Klondike Wind 1                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 7 Klondike Wind 3                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| 8 Stateline Wind                 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>Total Renewable Resources</b> |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
| 9 Federal Entities               | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>10 Total</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

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**5. PNW REGIONAL HYDRO FORECASTS BY WATER YEAR.....81**

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**Table 5.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: **5/9/2019**  
S183-RC-20190515-110000

|            | A    | B      | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      |
|------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Energy-Amw |      | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr1   | Apr16  | May    | Jun    | Jul    | Aug1   | Aug16  | Sep    | Avg    |
| 1          | 1929 | 10,639 | 13,014 | 12,454 | 12,392 | 11,982 | 10,971 | 9,450  | 9,966  | 12,793 | 18,474 | 11,548 | 11,180 | 10,368 | 10,206 | 12,071 |
| 2          | 1930 | 10,592 | 12,099 | 11,956 | 11,728 | 12,399 | 10,916 | 10,744 | 10,525 | 12,801 | 13,712 | 13,146 | 11,326 | 10,451 | 10,071 | 11,742 |
| 3          | 1931 | 10,449 | 12,297 | 12,146 | 11,970 | 11,669 | 11,125 | 9,998  | 9,412  | 12,981 | 12,726 | 12,457 | 11,465 | 10,148 | 10,041 | 11,532 |
| 4          | 1932 | 10,116 | 11,867 | 12,199 | 13,240 | 9,848  | 14,675 | 16,235 | 20,231 | 21,426 | 20,794 | 16,157 | 13,345 | 11,907 | 10,813 | 14,343 |
| 5          | 1933 | 10,301 | 13,260 | 15,985 | 18,342 | 17,171 | 14,971 | 13,749 | 13,049 | 18,460 | 23,639 | 21,421 | 16,926 | 14,966 | 11,585 | 16,207 |
| 6          | 1934 | 12,452 | 18,429 | 22,430 | 23,937 | 22,250 | 19,319 | 20,293 | 20,114 | 19,504 | 17,943 | 12,224 | 11,000 | 10,637 | 9,557  | 17,405 |
| 7          | 1935 | 10,233 | 12,706 | 14,116 | 18,276 | 17,152 | 14,622 | 11,082 | 13,820 | 17,734 | 16,808 | 16,483 | 15,195 | 11,135 | 10,102 | 14,483 |
| 8          | 1936 | 10,046 | 12,315 | 12,176 | 12,368 | 11,122 | 11,411 | 11,150 | 17,277 | 21,889 | 20,259 | 14,581 | 11,124 | 10,424 | 9,534  | 13,395 |
| 9          | 1937 | 10,693 | 12,160 | 12,188 | 11,339 | 10,489 | 10,405 | 10,072 | 9,518  | 12,772 | 16,747 | 13,113 | 11,699 | 10,275 | 10,359 | 11,754 |
| 10         | 1938 | 10,237 | 13,235 | 14,747 | 17,053 | 15,790 | 16,611 | 17,031 | 20,948 | 21,514 | 18,570 | 16,775 | 11,740 | 10,606 | 10,443 | 15,425 |
| 11         | 1939 | 10,236 | 12,447 | 12,539 | 15,379 | 14,322 | 12,757 | 12,666 | 15,776 | 17,254 | 15,132 | 13,541 | 10,842 | 10,325 | 9,813  | 13,182 |
| 12         | 1940 | 10,456 | 12,727 | 14,704 | 15,474 | 13,677 | 15,641 | 14,363 | 13,355 | 17,590 | 14,814 | 10,983 | 10,247 | 9,846  | 9,795  | 13,317 |
| 13         | 1941 | 10,419 | 12,449 | 13,539 | 13,210 | 12,856 | 12,080 | 9,902  | 8,984  | 12,778 | 14,492 | 12,224 | 11,225 | 10,094 | 10,273 | 12,033 |
| 14         | 1942 | 10,343 | 12,823 | 16,951 | 16,440 | 15,583 | 11,010 | 10,514 | 13,087 | 14,895 | 20,530 | 17,777 | 13,187 | 12,265 | 11,363 | 14,348 |
| 15         | 1943 | 10,250 | 12,822 | 14,051 | 18,930 | 17,478 | 16,624 | 22,583 | 22,335 | 19,549 | 23,241 | 21,477 | 14,249 | 12,036 | 10,858 | 16,726 |
| 16         | 1944 | 10,905 | 12,316 | 12,618 | 13,556 | 12,364 | 10,536 | 9,846  | 8,935  | 11,412 | 13,566 | 11,507 | 11,210 | 9,980  | 9,676  | 11,534 |
| 17         | 1945 | 10,103 | 11,716 | 12,126 | 13,030 | 11,906 | 10,900 | 9,526  | 9,620  | 16,643 | 20,371 | 12,542 | 11,498 | 10,423 | 10,194 | 12,502 |
| 18         | 1946 | 10,874 | 12,819 | 14,918 | 16,973 | 16,260 | 15,194 | 19,068 | 21,713 | 21,836 | 19,411 | 18,521 | 14,700 | 12,892 | 11,103 | 16,005 |
| 19         | 1947 | 10,393 | 14,508 | 19,907 | 20,158 | 19,832 | 17,745 | 16,768 | 16,436 | 20,448 | 19,883 | 17,278 | 12,901 | 11,562 | 10,952 | 16,655 |
| 20         | 1948 | 15,765 | 16,982 | 16,912 | 20,254 | 18,281 | 14,695 | 15,173 | 18,739 | 23,462 | 23,695 | 18,700 | 17,127 | 15,414 | 11,984 | 17,830 |
| 21         | 1949 | 11,165 | 13,888 | 14,282 | 15,966 | 15,616 | 17,244 | 17,105 | 19,916 | 21,933 | 19,268 | 13,239 | 11,138 | 10,119 | 10,003 | 15,138 |
| 22         | 1950 | 10,552 | 13,068 | 15,135 | 20,481 | 19,391 | 19,158 | 19,865 | 18,363 | 20,096 | 23,495 | 22,914 | 17,269 | 15,320 | 11,806 | 17,621 |
| 23         | 1951 | 13,162 | 18,104 | 20,867 | 22,934 | 23,853 | 20,244 | 20,550 | 20,000 | 21,677 | 19,625 | 20,157 | 15,370 | 12,043 | 11,452 | 18,822 |
| 24         | 1952 | 14,827 | 15,752 | 17,344 | 19,776 | 18,903 | 15,094 | 19,182 | 22,467 | 23,542 | 20,486 | 16,973 | 13,315 | 11,671 | 9,838  | 17,147 |
| 25         | 1953 | 10,927 | 12,027 | 12,164 | 15,750 | 20,454 | 13,689 | 10,171 | 11,777 | 19,201 | 23,745 | 20,466 | 14,074 | 12,701 | 11,219 | 15,313 |
| 26         | 1954 | 11,015 | 14,539 | 16,426 | 19,988 | 19,862 | 16,542 | 15,815 | 15,695 | 21,213 | 21,896 | 22,488 | 18,591 | 17,857 | 14,887 | 17,734 |
| 27         | 1955 | 11,357 | 15,893 | 15,931 | 14,812 | 14,487 | 10,336 | 11,399 | 9,753  | 16,479 | 23,504 | 22,241 | 16,668 | 13,499 | 11,155 | 15,153 |
| 28         | 1956 | 12,255 | 17,144 | 20,263 | 22,736 | 21,165 | 20,244 | 19,407 | 23,360 | 23,387 | 23,582 | 19,794 | 15,866 | 14,466 | 11,500 | 19,045 |
| 29         | 1957 | 11,855 | 13,836 | 16,760 | 17,131 | 14,846 | 16,481 | 18,550 | 16,078 | 23,904 | 23,381 | 15,184 | 13,570 | 10,827 | 10,200 | 16,093 |
| 30         | 1958 | 10,438 | 12,661 | 14,331 | 18,669 | 17,940 | 14,870 | 13,918 | 17,219 | 22,443 | 21,744 | 14,562 | 13,082 | 10,801 | 10,417 | 15,453 |
| 31         | 1959 | 10,850 | 15,751 | 19,053 | 21,590 | 21,112 | 16,307 | 18,138 | 16,499 | 20,056 | 21,893 | 20,719 | 16,089 | 15,056 | 16,290 | 18,027 |

**Table 5.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

|    | A          | B      | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      |
|----|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|    | Energy-Amw | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr1   | Apr16  | May    | Jun    | Jul    | Aug1   | Aug16  | Sep    | Avg    |
| 32 | 1960       | 17,364 | 18,774 | 18,400 | 18,753 | 17,539 | 15,348 | 20,655 | 18,910 | 18,002 | 20,327 | 16,404 | 14,578 | 11,215 | 10,601 | 17,005 |
| 33 | 1961       | 10,683 | 14,599 | 14,831 | 18,299 | 18,501 | 17,567 | 16,970 | 13,682 | 20,153 | 21,864 | 14,858 | 13,433 | 11,142 | 10,177 | 15,746 |
| 34 | 1962       | 10,442 | 12,884 | 14,676 | 17,899 | 17,133 | 12,158 | 15,185 | 21,185 | 19,474 | 19,048 | 14,689 | 14,056 | 12,043 | 10,636 | 15,007 |
| 35 | 1963       | 11,753 | 16,048 | 18,228 | 18,860 | 18,466 | 12,703 | 11,846 | 10,691 | 17,594 | 20,953 | 15,867 | 12,971 | 11,315 | 11,376 | 15,426 |
| 36 | 1964       | 10,375 | 13,702 | 14,743 | 16,346 | 15,350 | 11,626 | 14,263 | 12,890 | 19,609 | 24,205 | 21,686 | 16,468 | 14,829 | 12,844 | 15,807 |
| 37 | 1965       | 12,348 | 15,002 | 20,537 | 23,105 | 23,719 | 20,019 | 14,811 | 22,098 | 21,902 | 20,907 | 17,335 | 16,197 | 14,577 | 10,918 | 18,292 |
| 38 | 1966       | 11,352 | 13,881 | 15,212 | 17,492 | 16,213 | 13,042 | 15,600 | 14,318 | 16,853 | 19,026 | 15,985 | 13,261 | 11,034 | 10,618 | 14,722 |
| 39 | 1967       | 10,295 | 12,873 | 16,525 | 20,821 | 19,718 | 17,078 | 14,691 | 11,228 | 19,502 | 23,415 | 19,724 | 14,744 | 13,238 | 11,274 | 16,510 |
| 40 | 1968       | 11,561 | 14,601 | 15,511 | 18,871 | 19,082 | 17,784 | 10,328 | 9,670  | 16,459 | 21,305 | 16,993 | 14,949 | 14,548 | 13,895 | 15,893 |
| 41 | 1969       | 12,998 | 17,124 | 17,412 | 21,690 | 20,784 | 17,209 | 19,719 | 22,122 | 23,233 | 21,076 | 17,262 | 13,262 | 10,967 | 10,659 | 17,690 |
| 42 | 1970       | 11,027 | 13,621 | 13,961 | 18,603 | 18,167 | 13,667 | 10,817 | 9,985  | 18,877 | 22,133 | 15,005 | 12,250 | 10,925 | 10,113 | 14,751 |
| 43 | 1971       | 10,967 | 12,722 | 14,973 | 22,351 | 23,577 | 20,084 | 19,356 | 19,391 | 23,364 | 24,325 | 21,412 | 17,212 | 15,955 | 11,856 | 18,450 |
| 44 | 1972       | 11,747 | 14,438 | 16,107 | 22,335 | 21,190 | 24,304 | 22,843 | 18,611 | 22,854 | 23,933 | 21,408 | 17,461 | 16,628 | 12,389 | 19,038 |
| 45 | 1973       | 11,557 | 14,164 | 15,829 | 17,514 | 16,408 | 12,167 | 9,748  | 8,759  | 13,056 | 14,831 | 12,530 | 11,501 | 9,857  | 10,474 | 13,197 |
| 46 | 1974       | 10,314 | 12,744 | 17,633 | 25,414 | 24,544 | 21,946 | 21,040 | 22,044 | 22,041 | 24,149 | 23,148 | 17,737 | 16,608 | 12,015 | 19,377 |
| 47 | 1975       | 10,340 | 13,122 | 14,673 | 18,349 | 17,379 | 16,607 | 12,661 | 13,177 | 20,717 | 23,130 | 22,251 | 14,998 | 14,103 | 12,399 | 16,373 |
| 48 | 1976       | 13,290 | 17,665 | 22,197 | 22,146 | 21,310 | 18,410 | 20,195 | 18,888 | 23,016 | 21,066 | 21,088 | 19,406 | 19,211 | 15,809 | 19,572 |
| 49 | 1977       | 11,281 | 12,884 | 12,751 | 14,028 | 12,557 | 10,468 | 9,354  | 8,470  | 11,805 | 11,979 | 10,983 | 11,091 | 9,922  | 9,439  | 11,466 |
| 50 | 1978       | 9,188  | 12,305 | 15,528 | 16,869 | 15,682 | 14,513 | 19,000 | 15,776 | 20,387 | 17,772 | 17,398 | 13,750 | 12,365 | 13,755 | 15,316 |
| 51 | 1979       | 11,338 | 13,619 | 13,193 | 15,238 | 13,725 | 14,912 | 10,887 | 12,767 | 19,319 | 15,812 | 12,275 | 10,901 | 10,157 | 10,278 | 13,510 |
| 52 | 1980       | 10,264 | 12,425 | 12,738 | 15,820 | 13,232 | 11,891 | 14,113 | 17,290 | 22,250 | 21,297 | 15,165 | 11,347 | 10,518 | 10,729 | 14,368 |
| 53 | 1981       | 10,207 | 13,902 | 18,832 | 20,793 | 19,821 | 13,069 | 9,444  | 11,147 | 19,223 | 22,368 | 18,933 | 16,215 | 14,741 | 11,226 | 16,176 |
| 54 | 1982       | 10,794 | 14,531 | 15,603 | 19,351 | 22,293 | 22,587 | 19,105 | 15,979 | 21,839 | 22,873 | 22,510 | 16,421 | 15,757 | 13,497 | 18,282 |
| 55 | 1983       | 12,661 | 14,793 | 16,816 | 20,898 | 20,438 | 20,026 | 17,032 | 15,107 | 20,332 | 20,644 | 20,895 | 16,468 | 15,388 | 12,090 | 17,634 |
| 56 | 1984       | 11,244 | 18,217 | 17,203 | 20,654 | 18,827 | 18,210 | 15,748 | 19,021 | 19,675 | 22,606 | 19,933 | 15,415 | 12,434 | 12,185 | 17,493 |
| 57 | 1985       | 11,380 | 15,166 | 15,076 | 16,148 | 15,124 | 12,969 | 15,760 | 17,109 | 19,005 | 15,924 | 12,679 | 10,479 | 9,730  | 10,597 | 14,208 |
| 58 | 1986       | 11,823 | 16,072 | 15,346 | 18,854 | 19,673 | 21,522 | 19,618 | 19,188 | 18,598 | 20,118 | 14,031 | 12,340 | 10,638 | 10,337 | 16,418 |
| 59 | 1987       | 10,765 | 13,887 | 15,103 | 15,185 | 13,288 | 14,353 | 11,384 | 12,818 | 18,589 | 14,966 | 11,581 | 10,650 | 9,807  | 10,610 | 13,393 |
| 60 | 1988       | 9,989  | 11,646 | 11,645 | 12,279 | 11,633 | 11,101 | 9,971  | 12,146 | 13,169 | 15,258 | 13,792 | 11,331 | 10,243 | 9,970  | 11,859 |
| 61 | 1989       | 10,651 | 12,816 | 13,909 | 13,384 | 10,461 | 14,069 | 14,862 | 20,800 | 18,747 | 16,293 | 13,520 | 11,352 | 10,503 | 10,381 | 13,590 |
| 62 | 1990       | 10,365 | 14,176 | 16,685 | 18,471 | 18,212 | 15,804 | 14,957 | 19,061 | 18,391 | 20,656 | 16,585 | 14,317 | 13,069 | 10,434 | 15,862 |

**Table 5.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

|            | A    | B      | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      |
|------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Energy-Amw |      | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr1   | Apr16  | May    | Jun    | Jul    | Aug1   | Aug16  | Sep    | Avg    |
| 63         | 1991 | 10,670 | 18,021 | 17,253 | 20,292 | 19,062 | 16,371 | 15,747 | 14,699 | 18,902 | 20,319 | 20,410 | 16,421 | 13,915 | 10,467 | 16,840 |
| 64         | 1992 | 9,894  | 13,095 | 12,300 | 14,285 | 13,385 | 12,267 | 9,700  | 10,007 | 16,193 | 13,316 | 10,989 | 10,587 | 9,778  | 10,081 | 12,152 |
| 65         | 1993 | 9,997  | 12,141 | 12,313 | 12,456 | 10,273 | 12,655 | 12,001 | 10,157 | 20,328 | 18,164 | 14,528 | 12,278 | 10,799 | 10,347 | 12,998 |
| 66         | 1994 | 10,560 | 12,459 | 12,852 | 12,833 | 12,548 | 11,299 | 10,092 | 13,664 | 15,518 | 14,475 | 13,134 | 11,107 | 10,073 | 9,975  | 12,343 |
| 67         | 1995 | 10,543 | 11,680 | 13,348 | 15,552 | 16,534 | 16,567 | 12,983 | 10,244 | 18,802 | 21,082 | 16,360 | 13,312 | 10,883 | 11,150 | 14,604 |
| 68         | 1996 | 12,378 | 19,519 | 24,085 | 24,821 | 24,398 | 22,869 | 20,170 | 22,931 | 21,950 | 21,686 | 20,249 | 15,914 | 14,264 | 11,392 | 19,988 |
| 69         | 1997 | 10,873 | 14,570 | 17,461 | 24,413 | 23,792 | 22,893 | 20,746 | 23,121 | 23,435 | 23,753 | 21,621 | 16,398 | 16,191 | 13,873 | 19,563 |
| 70         | 1998 | 16,416 | 16,750 | 15,580 | 17,346 | 18,462 | 14,796 | 12,040 | 11,637 | 22,248 | 22,660 | 16,902 | 14,755 | 13,686 | 10,518 | 16,477 |
| 71         | 1999 | 11,044 | 12,479 | 17,275 | 21,811 | 20,562 | 20,915 | 16,636 | 18,222 | 20,299 | 23,063 | 22,051 | 18,690 | 17,091 | 11,584 | 18,037 |
| 72         | 2000 | 10,900 | 18,400 | 18,433 | 18,198 | 17,069 | 15,639 | 18,576 | 20,932 | 19,356 | 15,755 | 15,811 | 13,740 | 10,824 | 10,188 | 15,972 |
| 73         | 2001 | 10,375 | 12,234 | 12,277 | 13,042 | 11,893 | 10,718 | 9,688  | 8,632  | 12,714 | 12,086 | 11,579 | 11,153 | 9,841  | 9,353  | 11,329 |
| 74         | 2002 | 8,866  | 11,739 | 13,895 | 13,742 | 12,942 | 12,098 | 13,868 | 17,994 | 17,678 | 21,717 | 19,093 | 12,813 | 11,138 | 10,304 | 14,161 |
| 75         | 2003 | 10,143 | 12,707 | 12,367 | 13,634 | 13,992 | 15,428 | 12,848 | 13,553 | 15,036 | 20,063 | 13,102 | 10,027 | 9,664  | 9,901  | 13,273 |
| 76         | 2004 | 10,248 | 13,290 | 14,600 | 14,308 | 12,101 | 12,295 | 12,147 | 12,721 | 15,780 | 17,543 | 13,557 | 10,693 | 10,867 | 12,007 | 13,246 |
| 77         | 2005 | 11,164 | 13,712 | 15,686 | 16,727 | 16,253 | 12,255 | 9,343  | 9,884  | 15,894 | 16,760 | 14,091 | 11,483 | 10,304 | 10,376 | 13,614 |
| 78         | 2006 | 10,195 | 13,066 | 14,705 | 20,046 | 18,881 | 15,295 | 19,728 | 20,338 | 21,795 | 22,003 | 14,987 | 11,874 | 10,265 | 9,903  | 15,977 |
| 79         | 2007 | 9,968  | 14,307 | 15,227 | 18,083 | 15,728 | 18,419 | 15,674 | 13,391 | 19,261 | 18,244 | 15,311 | 11,315 | 9,797  | 9,416  | 14,923 |
| 80         | 2008 | 10,169 | 12,790 | 13,527 | 14,336 | 13,334 | 12,676 | 11,563 | 10,371 | 19,985 | 23,685 | 18,719 | 13,104 | 12,011 | 10,528 | 14,443 |

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**Table 5.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

|            | A    | B      | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      |
|------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Energy-Amw |      | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr1   | Apr16  | May    | Jun    | Jul    | Aug1   | Aug16  | Sep    | Avg    |
| 1          | 1929 | 10,641 | 13,015 | 12,453 | 12,342 | 11,933 | 10,902 | 9,386  | 9,902  | 12,788 | 18,473 | 11,552 | 11,210 | 10,398 | 10,206 | 12,055 |
| 2          | 1930 | 10,595 | 12,100 | 11,956 | 11,675 | 12,317 | 10,858 | 10,705 | 10,487 | 12,804 | 13,718 | 13,146 | 11,326 | 10,451 | 10,055 | 11,721 |
| 3          | 1931 | 10,451 | 12,298 | 12,146 | 11,927 | 11,628 | 11,085 | 9,981  | 9,396  | 12,989 | 12,726 | 12,457 | 11,483 | 10,166 | 10,036 | 11,522 |
| 4          | 1932 | 10,118 | 11,868 | 12,198 | 13,191 | 9,809  | 14,573 | 16,159 | 20,197 | 21,493 | 20,944 | 16,167 | 13,354 | 11,916 | 10,813 | 14,355 |
| 5          | 1933 | 10,304 | 13,261 | 15,968 | 18,183 | 17,304 | 14,848 | 13,877 | 12,823 | 18,423 | 24,103 | 21,680 | 16,942 | 14,982 | 11,583 | 16,243 |
| 6          | 1934 | 12,455 | 18,102 | 21,224 | 23,004 | 22,190 | 19,166 | 20,290 | 20,013 | 19,570 | 18,111 | 12,224 | 11,000 | 10,637 | 9,557  | 17,181 |
| 7          | 1935 | 10,235 | 12,708 | 14,116 | 17,903 | 17,129 | 14,876 | 10,999 | 13,737 | 17,680 | 16,788 | 16,493 | 15,197 | 11,138 | 10,102 | 14,452 |
| 8          | 1936 | 10,048 | 12,316 | 12,176 | 12,286 | 11,040 | 11,328 | 11,063 | 17,190 | 21,964 | 20,332 | 14,614 | 11,124 | 10,424 | 9,524  | 13,388 |
| 9          | 1937 | 10,695 | 12,161 | 12,188 | 11,294 | 10,437 | 10,327 | 9,990  | 9,436  | 12,751 | 16,727 | 13,117 | 11,728 | 10,303 | 10,356 | 11,735 |
| 10         | 1938 | 10,240 | 13,236 | 14,746 | 16,979 | 15,699 | 16,529 | 16,920 | 20,872 | 21,521 | 18,611 | 16,787 | 11,740 | 10,606 | 10,436 | 15,401 |
| 11         | 1939 | 10,238 | 12,448 | 12,539 | 15,326 | 14,258 | 12,676 | 12,606 | 15,688 | 17,222 | 15,102 | 13,543 | 10,842 | 10,325 | 9,799  | 13,150 |
| 12         | 1940 | 10,458 | 12,728 | 14,703 | 15,400 | 13,595 | 15,533 | 14,276 | 13,268 | 17,584 | 14,817 | 10,983 | 10,248 | 9,846  | 9,767  | 13,284 |
| 13         | 1941 | 10,422 | 12,450 | 13,539 | 13,150 | 12,776 | 12,008 | 9,853  | 8,936  | 12,746 | 14,483 | 12,224 | 11,225 | 10,099 | 10,245 | 12,004 |
| 14         | 1942 | 10,345 | 12,824 | 16,887 | 16,354 | 15,485 | 10,949 | 10,439 | 13,013 | 14,817 | 20,692 | 17,795 | 13,210 | 12,291 | 11,347 | 14,322 |
| 15         | 1943 | 10,252 | 12,823 | 14,050 | 18,782 | 17,321 | 16,615 | 22,392 | 22,175 | 19,456 | 23,336 | 21,489 | 14,269 | 12,056 | 10,837 | 16,685 |
| 16         | 1944 | 10,908 | 12,317 | 12,618 | 13,509 | 12,302 | 10,467 | 9,793  | 8,882  | 11,390 | 13,539 | 11,507 | 11,210 | 9,980  | 9,660  | 11,508 |
| 17         | 1945 | 10,105 | 11,717 | 12,125 | 12,983 | 11,824 | 10,832 | 9,480  | 9,575  | 16,569 | 20,545 | 12,552 | 11,502 | 10,426 | 10,177 | 12,492 |
| 18         | 1946 | 10,876 | 12,833 | 14,918 | 16,908 | 16,141 | 15,063 | 18,966 | 21,591 | 22,407 | 19,461 | 18,530 | 14,709 | 12,901 | 11,077 | 16,022 |
| 19         | 1947 | 10,395 | 14,509 | 19,793 | 20,094 | 19,759 | 17,533 | 16,564 | 16,429 | 20,582 | 20,051 | 17,289 | 12,915 | 11,575 | 10,934 | 16,625 |
| 20         | 1948 | 15,765 | 17,012 | 16,855 | 20,159 | 18,158 | 14,631 | 15,249 | 18,646 | 23,944 | 24,337 | 18,699 | 17,134 | 15,417 | 11,964 | 17,895 |
| 21         | 1949 | 11,167 | 13,890 | 14,282 | 15,913 | 15,531 | 17,074 | 17,184 | 19,710 | 22,053 | 19,388 | 13,243 | 11,138 | 10,119 | 9,998  | 15,126 |
| 22         | 1950 | 10,554 | 13,069 | 15,134 | 20,166 | 19,570 | 18,788 | 19,632 | 18,027 | 20,068 | 23,889 | 23,298 | 17,300 | 15,346 | 11,789 | 17,612 |
| 23         | 1951 | 13,165 | 18,153 | 20,412 | 22,429 | 23,563 | 19,877 | 20,475 | 19,819 | 21,659 | 19,765 | 20,144 | 15,393 | 12,065 | 11,439 | 18,677 |
| 24         | 1952 | 14,829 | 15,753 | 17,289 | 19,771 | 18,740 | 14,994 | 19,143 | 22,381 | 23,617 | 20,584 | 16,969 | 13,310 | 11,666 | 9,808  | 17,123 |
| 25         | 1953 | 10,930 | 12,028 | 12,164 | 15,289 | 20,527 | 13,662 | 10,121 | 11,687 | 19,131 | 23,936 | 20,476 | 14,068 | 12,696 | 11,183 | 15,265 |
| 26         | 1954 | 11,018 | 14,540 | 16,425 | 19,603 | 19,771 | 16,819 | 15,729 | 15,435 | 21,442 | 22,555 | 22,849 | 18,603 | 17,868 | 14,785 | 17,795 |
| 27         | 1955 | 11,359 | 15,894 | 15,921 | 14,739 | 14,416 | 10,254 | 11,098 | 9,841  | 16,435 | 24,213 | 22,679 | 16,678 | 13,509 | 11,134 | 15,218 |
| 28         | 1956 | 12,257 | 17,174 | 20,049 | 22,713 | 21,087 | 19,621 | 19,252 | 23,142 | 23,954 | 24,264 | 19,784 | 15,860 | 14,459 | 11,465 | 19,047 |
| 29         | 1957 | 11,857 | 13,837 | 16,732 | 17,015 | 14,799 | 16,263 | 18,773 | 15,939 | 24,029 | 23,922 | 15,189 | 13,570 | 10,828 | 10,167 | 16,118 |
| 30         | 1958 | 10,440 | 12,662 | 14,331 | 18,525 | 17,792 | 14,788 | 13,829 | 17,130 | 22,568 | 21,937 | 14,537 | 13,057 | 10,776 | 10,370 | 15,426 |
| 31         | 1959 | 10,852 | 15,752 | 18,954 | 21,553 | 21,121 | 15,984 | 17,941 | 16,284 | 20,344 | 22,328 | 20,708 | 16,126 | 15,092 | 16,189 | 18,018 |
| 32         | 1960 | 17,343 | 18,587 | 18,190 | 18,734 | 17,388 | 15,375 | 20,527 | 18,589 | 17,954 | 20,533 | 16,420 | 14,588 | 11,224 | 10,588 | 16,953 |
| 33         | 1961 | 10,685 | 14,600 | 14,831 | 18,190 | 18,353 | 17,515 | 16,962 | 13,516 | 20,338 | 22,486 | 14,866 | 13,433 | 11,142 | 10,165 | 15,774 |

**Table 5.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

|            | A    | B      | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      |
|------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Energy-Amw | Oct  | Nov    | Dec    | Jan    | Feb    | Mar    | Apr1   | Apr16  | May    | Jun    | Jul    | Aug1   | Aug16  | Sep    | Avg    |        |
| 34         | 1962 | 10,444 | 12,885 | 14,676 | 17,808 | 17,000 | 12,076 | 15,015 | 21,056 | 19,430 | 19,196 | 14,701 | 14,064 | 12,051 | 10,634 | 14,974 |
| 35         | 1963 | 11,755 | 16,049 | 18,110 | 18,631 | 18,319 | 12,621 | 11,773 | 10,605 | 17,512 | 21,193 | 15,878 | 12,971 | 11,315 | 11,361 | 15,376 |
| 36         | 1964 | 10,377 | 13,703 | 14,743 | 16,264 | 15,275 | 11,543 | 14,241 | 12,783 | 19,555 | 24,581 | 21,736 | 16,492 | 14,853 | 12,838 | 15,815 |
| 37         | 1965 | 12,351 | 15,003 | 20,394 | 23,007 | 23,544 | 19,583 | 14,428 | 21,980 | 22,357 | 21,101 | 17,346 | 16,185 | 14,564 | 10,905 | 18,239 |
| 38         | 1966 | 11,354 | 13,882 | 15,211 | 17,401 | 16,122 | 12,823 | 15,805 | 14,192 | 16,832 | 18,998 | 15,995 | 13,265 | 11,038 | 10,607 | 14,684 |
| 39         | 1967 | 10,297 | 12,874 | 16,517 | 20,536 | 19,710 | 16,873 | 14,430 | 11,095 | 19,424 | 24,068 | 19,713 | 14,752 | 13,246 | 11,271 | 16,489 |
| 40         | 1968 | 11,563 | 14,602 | 15,511 | 18,733 | 18,935 | 17,708 | 10,307 | 9,646  | 16,453 | 21,528 | 16,991 | 14,984 | 14,583 | 13,886 | 15,873 |
| 41         | 1969 | 13,000 | 17,150 | 17,357 | 21,656 | 20,777 | 16,943 | 19,763 | 22,039 | 23,428 | 21,458 | 17,283 | 13,273 | 10,979 | 10,655 | 17,702 |
| 42         | 1970 | 11,029 | 13,622 | 13,961 | 18,456 | 18,019 | 13,800 | 10,630 | 9,877  | 18,738 | 22,342 | 15,017 | 12,257 | 10,931 | 10,108 | 14,723 |
| 43         | 1971 | 10,969 | 12,723 | 14,973 | 22,551 | 22,706 | 19,830 | 19,215 | 19,213 | 23,802 | 24,896 | 21,465 | 17,228 | 15,970 | 11,826 | 18,440 |
| 44         | 1972 | 11,749 | 14,439 | 16,107 | 21,722 | 21,131 | 24,009 | 22,881 | 18,511 | 23,384 | 24,737 | 21,366 | 17,482 | 16,648 | 12,367 | 19,056 |
| 45         | 1973 | 11,560 | 14,165 | 15,829 | 17,421 | 16,315 | 12,085 | 9,692  | 8,704  | 13,039 | 14,820 | 12,530 | 11,527 | 9,882  | 10,457 | 13,160 |
| 46         | 1974 | 10,316 | 12,745 | 17,533 | 24,376 | 24,286 | 21,521 | 20,861 | 21,900 | 22,554 | 24,818 | 23,448 | 17,744 | 16,615 | 12,005 | 19,321 |
| 47         | 1975 | 10,342 | 13,123 | 14,672 | 18,203 | 17,258 | 16,707 | 12,397 | 13,090 | 20,614 | 23,442 | 22,326 | 15,030 | 14,134 | 12,384 | 16,368 |
| 48         | 1976 | 13,292 | 17,711 | 21,585 | 21,968 | 21,314 | 18,002 | 20,028 | 18,957 | 23,163 | 21,389 | 21,154 | 19,411 | 19,378 | 15,723 | 19,511 |
| 49         | 1977 | 11,283 | 12,885 | 12,750 | 13,970 | 12,493 | 10,395 | 9,339  | 8,455  | 11,765 | 11,979 | 10,983 | 11,103 | 9,934  | 9,436  | 11,443 |
| 50         | 1978 | 9,190  | 12,306 | 15,493 | 16,908 | 15,684 | 14,248 | 18,970 | 15,651 | 20,318 | 17,777 | 17,410 | 13,777 | 12,392 | 13,732 | 15,283 |
| 51         | 1979 | 11,340 | 13,620 | 13,192 | 15,162 | 13,651 | 14,828 | 10,937 | 12,630 | 19,313 | 15,821 | 12,282 | 10,901 | 10,157 | 10,266 | 13,486 |
| 52         | 1980 | 10,266 | 12,426 | 12,738 | 15,738 | 13,150 | 11,809 | 14,034 | 17,210 | 22,354 | 21,486 | 15,173 | 11,350 | 10,521 | 10,717 | 14,369 |
| 53         | 1981 | 10,209 | 13,903 | 18,642 | 20,207 | 19,632 | 12,999 | 9,497  | 11,138 | 19,242 | 22,841 | 18,957 | 16,223 | 14,749 | 11,226 | 16,125 |
| 54         | 1982 | 10,796 | 14,532 | 15,603 | 19,204 | 22,094 | 22,079 | 18,786 | 16,330 | 21,940 | 23,137 | 22,749 | 16,436 | 15,773 | 13,471 | 18,251 |
| 55         | 1983 | 12,664 | 14,794 | 16,793 | 20,791 | 20,211 | 19,722 | 17,076 | 14,910 | 20,312 | 20,798 | 20,836 | 16,483 | 15,370 | 12,060 | 17,570 |
| 56         | 1984 | 11,246 | 18,228 | 17,162 | 20,514 | 18,641 | 17,955 | 15,748 | 18,856 | 19,607 | 22,888 | 19,910 | 15,425 | 12,434 | 12,134 | 17,444 |
| 57         | 1985 | 11,382 | 15,167 | 15,075 | 16,176 | 15,107 | 12,886 | 15,664 | 17,013 | 18,924 | 15,860 | 12,679 | 10,493 | 9,745  | 10,546 | 14,177 |
| 58         | 1986 | 11,826 | 16,075 | 15,346 | 18,706 | 19,811 | 21,047 | 19,415 | 19,009 | 18,535 | 20,329 | 14,033 | 12,340 | 10,638 | 10,298 | 16,360 |
| 59         | 1987 | 10,767 | 13,888 | 15,103 | 15,106 | 13,206 | 14,269 | 11,459 | 12,712 | 18,554 | 14,962 | 11,580 | 10,672 | 9,829  | 10,600 | 13,370 |
| 60         | 1988 | 9,991  | 11,647 | 11,645 | 12,200 | 11,551 | 11,019 | 9,925  | 12,098 | 13,160 | 15,260 | 13,792 | 11,326 | 10,238 | 9,950  | 11,834 |
| 61         | 1989 | 10,653 | 12,817 | 13,908 | 13,385 | 10,409 | 14,089 | 14,723 | 20,604 | 18,646 | 16,284 | 13,523 | 11,345 | 10,496 | 10,355 | 13,571 |
| 62         | 1990 | 10,367 | 14,178 | 16,659 | 18,218 | 18,489 | 15,602 | 14,807 | 18,948 | 18,363 | 21,122 | 16,581 | 14,312 | 13,063 | 10,411 | 15,859 |
| 63         | 1991 | 10,672 | 17,979 | 17,140 | 19,927 | 19,090 | 16,260 | 15,614 | 14,486 | 18,870 | 20,584 | 20,408 | 16,431 | 13,924 | 10,457 | 16,788 |
| 64         | 1992 | 9,896  | 13,096 | 12,300 | 14,270 | 13,381 | 12,263 | 9,688  | 9,996  | 16,195 | 13,314 | 10,988 | 10,616 | 9,806  | 10,077 | 12,148 |
| 65         | 1993 | 10,000 | 12,142 | 12,313 | 12,444 | 10,264 | 12,594 | 11,928 | 9,989  | 20,396 | 18,145 | 14,538 | 12,283 | 10,803 | 10,316 | 12,992 |
| 66         | 1994 | 10,562 | 12,460 | 12,852 | 12,810 | 12,539 | 11,292 | 10,085 | 13,657 | 15,516 | 14,438 | 13,128 | 11,117 | 10,082 | 9,959  | 12,334 |

**Table 5.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A          | B    | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      |        |
|------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Energy-Amw | Oct  | Nov    | Dec    | Jan    | Feb    | Mar    | Apr1   | Apr16  | May    | Jun    | Jul    | Aug1   | Aug16  | Sep    | Avg    |        |
| 67         | 1995 | 10,545 | 11,681 | 13,348 | 15,535 | 16,468 | 16,497 | 12,913 | 10,176 | 18,768 | 21,329 | 16,364 | 13,303 | 10,874 | 11,119 | 14,596 |
| 68         | 1996 | 12,381 | 19,257 | 22,689 | 23,819 | 24,245 | 22,437 | 19,928 | 22,774 | 21,988 | 21,817 | 20,215 | 15,913 | 14,263 | 11,363 | 19,695 |
| 69         | 1997 | 10,876 | 14,571 | 17,395 | 24,258 | 23,707 | 22,444 | 20,581 | 23,057 | 23,970 | 24,471 | 21,601 | 16,405 | 16,198 | 13,854 | 19,581 |
| 70         | 1998 | 16,395 | 16,751 | 15,580 | 17,281 | 18,309 | 14,711 | 11,963 | 11,561 | 22,367 | 22,815 | 16,902 | 14,733 | 13,664 | 10,488 | 16,458 |
| 71         | 1999 | 11,047 | 12,480 | 17,244 | 21,635 | 20,365 | 20,601 | 16,697 | 18,004 | 20,288 | 23,293 | 22,261 | 18,682 | 17,083 | 11,559 | 17,998 |
| 72         | 2000 | 10,902 | 18,039 | 18,238 | 18,097 | 17,000 | 15,571 | 18,299 | 20,788 | 19,363 | 15,732 | 15,798 | 13,722 | 10,806 | 10,167 | 15,881 |
| 73         | 2001 | 10,377 | 12,235 | 12,277 | 13,018 | 11,870 | 10,692 | 9,653  | 8,596  | 12,679 | 12,046 | 11,560 | 11,146 | 9,834  | 9,336  | 11,309 |
| 74         | 2002 | 8,868  | 11,740 | 13,894 | 13,711 | 12,897 | 12,070 | 13,792 | 17,871 | 17,658 | 22,144 | 19,129 | 12,815 | 11,140 | 10,299 | 14,184 |
| 75         | 2003 | 10,145 | 12,708 | 12,366 | 13,616 | 13,978 | 15,397 | 12,903 | 13,374 | 14,989 | 20,250 | 13,085 | 10,009 | 9,646  | 9,876  | 13,267 |
| 76         | 2004 | 10,250 | 13,291 | 14,600 | 14,285 | 12,078 | 12,271 | 12,250 | 12,581 | 15,759 | 17,529 | 13,552 | 10,734 | 10,907 | 11,989 | 13,240 |
| 77         | 2005 | 11,167 | 13,713 | 15,670 | 16,691 | 16,200 | 12,306 | 9,255  | 9,706  | 15,919 | 16,704 | 14,068 | 11,488 | 10,308 | 10,356 | 13,586 |
| 78         | 2006 | 10,197 | 13,067 | 14,705 | 19,950 | 18,764 | 15,240 | 19,695 | 20,206 | 21,804 | 22,393 | 14,930 | 11,829 | 10,220 | 9,868  | 15,962 |
| 79         | 2007 | 9,970  | 14,310 | 15,227 | 17,979 | 15,690 | 18,313 | 15,613 | 13,346 | 19,224 | 18,171 | 15,283 | 11,295 | 9,776  | 9,394  | 14,881 |
| 80         | 2008 | 10,172 | 12,791 | 13,527 | 14,311 | 13,286 | 12,719 | 11,469 | 10,307 | 19,967 | 24,444 | 18,689 | 13,129 | 12,036 | 10,517 | 14,498 |

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**6. 4(H)(10)(C) CREDIT .....91**

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**Table 6.1.1**  
**4(h)(10)(C) Power Purchase Amounts By Water Year**  
**Fiscal Year 2020**

|    | A          | B     | C     | D     | E     | F     | G     | H     | I     | J     | K     | L     | M     | N    | O     | P     |
|----|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
|    | Energy-aMW | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | Apr2  | May   | Jun   | Jul   | Ag1   | Ag2  | Sep   | Avg   |
| 1  | 1929       | 1,360 | 413   | 1,582 | 2,105 | 1,570 | 1,510 | 1,979 | 2,978 | 2,885 | -51   | 771   | 665   | -127 | -185  | 1,228 |
| 2  | 1930       | 824   | 307   | 2,257 | 3,484 | 1,012 | 1,294 | 1,402 | 1,984 | 2,195 | 823   | -19   | 475   | 0    | -72   | 1,176 |
| 3  | 1931       | 745   | 170   | 1,954 | 3,376 | 966   | 1,081 | 1,989 | 3,267 | 1,867 | 1,165 | 0     | 0     | 0    | 499   | 1,207 |
| 4  | 1932       | 723   | 311   | 1,611 | 2,273 | 2,249 | 287   | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 293   | 642   |
| 5  | 1933       | 1,291 | 608   | 0     | 0     | 0     | 0     | 0     | 338   | 0     | 0     | 0     | 0     | 0    | 211   | 191   |
| 6  | 1934       | 565   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -488  | 208   | 377   | 0    | 410   | 75    |
| 7  | 1935       | 892   | 1,300 | 1,053 | 0     | 0     | 0     | 204   | 1,830 | 0     | 202   | -17   | 0     | 0    | 980   | 451   |
| 8  | 1936       | 1,359 | 489   | 1,615 | 3,151 | 2,034 | 1,331 | 918   | 0     | 0     | 0     | 0     | 264   | 0    | 1,188 | 979   |
| 9  | 1937       | 1,182 | 89    | 1,355 | 3,159 | 2,254 | 1,841 | 1,659 | 3,004 | 2,512 | -535  | -185  | 350   | -151 | -316  | 1,147 |
| 10 | 1938       | 766   | 391   | 986   | 46    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 171   | -129 | 236   | 206   |
| 11 | 1939       | 1,235 | 750   | 1,746 | 660   | 270   | 731   | 133   | 0     | 0     | 474   | 0     | 493   | 0    | 435   | 554   |
| 12 | 1940       | 857   | 441   | 345   | 986   | 308   | 0     | 0     | 2,100 | 0     | 965   | 1,256 | 1,174 | 201  | -6    | 574   |
| 13 | 1941       | 832   | -43   | 1,035 | 2,047 | 433   | 388   | 1,919 | 3,189 | 1,865 | 416   | 0     | 0     | 0    | 220   | 816   |
| 14 | 1942       | 707   | -62   | 0     | 0     | 63    | 2,896 | 1,293 | 1,257 | 831   | 0     | 0     | 0     | 0    | 0     | 481   |
| 15 | 1943       | 934   | 1,249 | 1,269 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 777   | 354   |
| 16 | 1944       | 1,453 | 443   | 1,643 | 1,409 | 1,524 | 1,879 | 2,253 | 3,374 | 3,308 | 1,221 | 586   | 0     | 0    | 719   | 1,417 |
| 17 | 1945       | 650   | -48   | 1,436 | 2,717 | 2,980 | 2,149 | 727   | 2,947 | 0     | 0     | 212   | 241   | -61  | -299  | 967   |
| 18 | 1946       | 776   | 40    | 825   | 375   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 320   | 197   |
| 19 | 1947       | 1,543 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 431   | 166   |
| 20 | 1948       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| 21 | 1949       | 980   | 156   | 643   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 19    | 479   | 64   | 260   | 196   |
| 22 | 1950       | 1,091 | 668   | 253   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 60    | 174   |
| 23 | 1951       | 302   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 344   | 54    |
| 24 | 1952       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 1,286 | 105   |
| 25 | 1953       | 1,350 | 472   | 1,586 | 1,218 | 0     | 214   | 1,918 | 1,445 | 0     | 0     | 0     | 0     | 0    | 379   | 579   |
| 26 | 1954       | 1,060 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 90    |
| 27 | 1955       | 950   | 0     | 0     | 1,017 | 291   | 1,871 | 764   | 2,435 | 0     | 0     | 0     | 0     | 0    | 496   | 521   |
| 28 | 1956       | 800   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 293   | 92    |

**Table 6.1.1**  
**4(h)(10)(C) Power Purchase Amounts By Water Year**  
**Fiscal Year 2020**

| A          | B    | C     | D    | E     | F     | G     | H     | I     | J     | K     | L     | M    | N   | O     | P     |       |
|------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|-------|-------|-------|
| Energy-aMW | Oct  | Nov   | Dec  | Jan   | Feb   | Mar   | Apr   | Apr   | May   | Jun   | Jul   | Ag1  | Ag2 | Sep   | Avg   |       |
| 29         | 1957 | 827   | 225  | 0     | 0     | 486   | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 889   | 199   |       |
| 30         | 1958 | 1,366 | 428  | 716   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -73  | 0   | 761   | 272   |       |
| 31         | 1959 | 1,062 | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 90    |       |
| 32         | 1960 | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -286  | 0    | 0   | 654   | 29    |       |
| 33         | 1961 | 1,080 | 0    | 350   | 0     | 0     | 0     | 0     | 0     | 0     | -182  | -218 | 0   | 791   | 162   |       |
| 34         | 1962 | 1,449 | 231  | 282   | 0     | 0     | 781   | 0     | 0     | 0     | 0     | 0    | 0   | 814   | 299   |       |
| 35         | 1963 | 524   | 0    | 0     | 0     | 0     | 759   | 741   | 1,907 | 0     | 0     | 0    | 0   | 137   | 229   |       |
| 36         | 1964 | 1,425 | 174  | 393   | 280   | 0     | 938   | 0     | 765   | 0     | 0     | 0    | 0   | 0     | 303   |       |
| 37         | 1965 | 212   | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 614   | 68    |       |
| 38         | 1966 | 775   | 17   | 0     | 0     | 0     | 704   | 0     | 0     | 204   | 0     | 0    | 0   | 690   | 201   |       |
| 39         | 1967 | 1,354 | 480  | 0     | 0     | 0     | 0     | 0     | 1,786 | 0     | 0     | 0    | 0   | 133   | 239   |       |
| 40         | 1968 | 948   | 0    | 0     | 0     | 0     | 0     | 1,510 | 1,947 | 317   | 0     | 0    | 0   | 0     | 249   |       |
| 41         | 1969 | 39    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 725   | 63    |       |
| 42         | 1970 | 947   | 39   | 997   | 0     | 0     | 172   | 1,351 | 1,931 | 0     | 0     | -57  | 0   | 1,055 | 402   |       |
| 43         | 1971 | 1,282 | 430  | 271   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 78    | 174   |       |
| 44         | 1972 | 794   | 28   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 70    |       |
| 45         | 1973 | 829   | 0    | 244   | 0     | 0     | 721   | 2,302 | 3,083 | 2,574 | 485   | 99   | 434 | 125   | -151  | 651   |
| 46         | 1974 | 848   | 586  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 120   |       |
| 47         | 1975 | 1,549 | 504  | 955   | 0     | 0     | 0     | 375   | 662   | 0     | 0     | 0    | 0   | 0     | 297   |       |
| 48         | 1976 | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 0     |       |
| 49         | 1977 | 747   | 420  | 1,386 | 982   | 1,117 | 2,026 | 2,228 | 3,123 | 2,969 | 2,004 | 590  | -65 | -14   | 1,211 | 1,340 |
| 50         | 1978 | 986   | -259 | 46    | 0     | 0     | 923   | 0     | 0     | 0     | 0     | 0    | -25 | 0     | 0     | 144   |
| 51         | 1979 | 389   | 191  | 1,454 | 1,029 | 324   | 0     | 375   | 2,530 | 0     | 251   | 761  | 462 | 0     | -57   | 503   |
| 52         | 1980 | 942   | 822  | 1,703 | 1,128 | 866   | 1,524 | 0     | 144   | 0     | 0     | -207 | 20  | -143  | 495   | 608   |
| 53         | 1981 | 1,233 | 0    | 0     | 0     | 0     | 477   | 1,782 | 1,741 | 0     | 0     | 0    | 0   | 137   | 301   |       |
| 54         | 1982 | 1,173 | 0    | 219   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 118   |       |
| 55         | 1983 | 137   | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 12    |       |
| 56         | 1984 | 988   | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0   | 0     | 84    |       |



**Table 6.1.1**  
**4(h)(10)(C) Power Purchase Amounts By Water Year**  
**Fiscal Year 2020**

|           | A              | B          | C          | D          | E          | F          | G          | H          | I          | J          | K          | L         | M          | N         | O          | P          |
|-----------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|-----------|------------|------------|
|           | Energy-aMW     | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        | Ap1        | Ap2        | May        | Jun        | Jul       | Ag1        | Ag2       | Sep        | Avg        |
| 57        | 1985           | 1,008      | 0          | 157        | 0          | 0          | 610        | 0          | 0          | 0          | -83        | 69        | 891        | 166       | 122        | 204        |
| 58        | 1986           | 271        | -367       | 6          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | -3        | 0          | -129      | 963        | 67         |
| 59        | 1987           | 1,513      | -19        | 0          | 597        | 1,167      | -350       | 982        | 1,084      | 0          | 186        | 655       | 510        | 0         | 353        | 443        |
| 60        | 1988           | 1,065      | 944        | 2,078      | 3,677      | 1,171      | 1,770      | 1,246      | 3,360      | 2,098      | 833        | -169      | 0          | 0         | 19         | 1,320      |
| 61        | 1989           | 714        | -33        | 816        | 2,709      | 2,101      | 0          | 0          | 0          | 0          | -685       | -762      | 360        | 0         | 235        | 432        |
| 62        | 1990           | 1,005      | 546        | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0         | 851        | 200        |
| 63        | 1991           | 1,448      | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0         | 725        | 183        |
| 64        | 1992           | 1,438      | 177        | 1,907      | 1,104      | 979        | 694        | 1,417      | 1,913      | -56        | 994        | 718       | 704        | -110      | 177        | 840        |
| 65        | 1993           | 712        | -47        | 1,650      | 2,672      | 2,256      | 398        | 1,219      | 2,597      | 0          | 0          | 0         | -95        | 0         | 128        | 794        |
| 66        | 1994           | 1,019      | 280        | 1,207      | 3,109      | 522        | 1,712      | 1,148      | 2,636      | 662        | 1,147      | 0         | 189        | 0         | 160        | 988        |
| 67        | 1995           | 947        | 1,003      | 1,189      | 1,331      | 0          | 0          | 0          | 4,387      | 0          | 0          | 0         | 0          | 0         | 183        | 572        |
| 68        | 1996           | 119        | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0         | 256        | 31         |
| 69        | 1997           | 1,160      | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0         | 0          | 99         |
| 70        | 1998           | 0          | 0          | 173        | 0          | 0          | 0          | 890        | 1,768      | 0          | 0          | 0         | 0          | 0         | 906        | 198        |
| 71        | 1999           | 1,356      | 693        | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0         | 140        | 184        |
| 72        | 2000           | 1,142      | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 298        | 0         | 0          | -30       | 930        | 196        |
| 73        | 2001           | 1,269      | 501        | 1,559      | 1,407      | 1,485      | 1,558      | 2,268      | 3,280      | 2,499      | 2,198      | 329       | -15        | -92       | 1,242      | 1,393      |
| 74        | 2002           | 1,148      | -107       | 802        | 1,896      | 1,924      | 713        | 0          | 0          | 0          | 0          | 0         | -123       | -56       | 772        | 582        |
| 75        | 2003           | 1,097      | 128        | 1,379      | 1,904      | 463        | 0          | 0          | 24         | 923        | 0          | -7        | 961        | 0         | 720        | 595        |
| 76        | 2004           | 951        | -161       | 163        | 2,126      | 1,072      | 956        | 0          | 2,801      | 354        | 0          | 0         | 585        | 0         | 0          | 596        |
| 77        | 2005           | 694        | 0          | 0          | 0          | 0          | 278        | 1,719      | 2,224      | 70         | 0          | 0         | 0          | 0         | 1,117      | 342        |
| 78        | 2006           | 1,244      | 0          | 215        | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | -113       | -100      | 1,545      | 242        |
| 79        | 2007           | 1,401      | -454       | 152        | 0          | 0          | 0          | 0          | 327        | 0          | 0          | -4        | 217        | 88        | 1,737      | 263        |
| 80        | 2008           | 1,084      | -36        | 860        | 1,130      | 657        | 304        | 356        | 2,245      | 0          | 0          | 0         | 0          | 0         | 774        | 505        |
| <b>81</b> | <b>Average</b> | <b>912</b> | <b>194</b> | <b>582</b> | <b>689</b> | <b>407</b> | <b>439</b> | <b>488</b> | <b>980</b> | <b>351</b> | <b>148</b> | <b>55</b> | <b>115</b> | <b>-6</b> | <b>400</b> | <b>414</b> |
| <b>82</b> | <b>Median</b>  | <b>951</b> | <b>0</b>   | <b>217</b> | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>  | <b>0</b>   | <b>0</b>  | <b>258</b> | <b>256</b> |

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**Table 6.1.2**  
**4(h)(10)(C) Power Purchase Amounts By Water Year**  
**Fiscal Year 2021**

|    | A          | B     | C     | D     | E     | F     | G     | H     | I     | J     | K     | L     | M     | N    | O     | P     |
|----|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
|    | Energy-aMW | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | Apr2  | May   | Jun   | Jul   | Ag1   | Ag2  | Sep   | Avg   |
| 1  | 1929       | 1,360 | 414   | 1,679 | 2,105 | 1,544 | 1,495 | 1,979 | 2,978 | 2,878 | -43   | 767   | 530   | -182 | -119  | 1,230 |
| 2  | 1930       | 833   | 310   | 2,340 | 3,484 | 914   | 1,294 | 1,407 | 1,999 | 2,188 | 852   | -45   | 412   | 0    | -70   | 1,174 |
| 3  | 1931       | 745   | 171   | 1,954 | 3,376 | 966   | 1,081 | 1,989 | 3,267 | 1,862 | 1,168 | 0     | 0     | 0    | 523   | 1,209 |
| 4  | 1932       | 717   | 311   | 1,611 | 2,184 | 2,390 | 213   | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 293   | 639   |
| 5  | 1933       | 1,291 | 608   | 0     | 0     | 0     | 0     | 0     | 452   | 0     | 0     | 0     | 0     | 0    | 211   | 196   |
| 6  | 1934       | 565   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -486  | 200   | 330   | -50  | 418   | 71    |
| 7  | 1935       | 886   | 1,336 | 1,264 | 0     | 0     | 0     | 205   | 1,830 | 0     | 228   | -5    | 0     | 0    | 980   | 475   |
| 8  | 1936       | 1,359 | 489   | 1,657 | 3,151 | 2,023 | 1,331 | 924   | 0     | 0     | 0     | 0     | 264   | 0    | 1,197 | 982   |
| 9  | 1937       | 1,182 | 89    | 1,423 | 3,159 | 2,254 | 1,762 | 1,715 | 3,012 | 2,508 | -534  | -206  | 201   | -243 | -245  | 1,143 |
| 10 | 1938       | 774   | 394   | 1,112 | 57    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 172   | -126 | 242   | 219   |
| 11 | 1939       | 1,239 | 750   | 1,881 | 660   | 270   | 731   | 195   | 0     | 0     | 514   | -11   | 493   | 0    | 435   | 571   |
| 12 | 1940       | 857   | 439   | 385   | 986   | 308   | 0     | 0     | 2,100 | 0     | 962   | 1,256 | 1,117 | 133  | 0     | 572   |
| 13 | 1941       | 833   | -46   | 1,130 | 2,047 | 433   | 388   | 1,917 | 3,189 | 1,861 | 414   | 0     | 0     | 0    | 220   | 823   |
| 14 | 1942       | 707   | -63   | 0     | 0     | 79    | 2,896 | 1,292 | 1,257 | 825   | 0     | 0     | 0     | 0    | -597  | 433   |
| 15 | 1943       | 1,019 | 978   | 1,158 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 777   | 329   |
| 16 | 1944       | 1,453 | 444   | 1,718 | 1,409 | 1,443 | 1,883 | 2,255 | 3,374 | 3,306 | 1,212 | 585   | -44   | 0    | 719   | 1,415 |
| 17 | 1945       | 649   | -48   | 1,436 | 2,724 | 2,901 | 2,136 | 727   | 2,947 | 0     | 0     | 207   | 122   | -146 | -240  | 956   |
| 18 | 1946       | 791   | 56    | 937   | 367   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 320   | 209   |
| 19 | 1947       | 1,543 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 431   | 166   |
| 20 | 1948       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     |
| 21 | 1949       | 980   | 156   | 643   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 10    | 476   | -85  | 293   | 191   |
| 22 | 1950       | 1,092 | 714   | 348   | 0     | 0     | 0     | 0     | 79    | 0     | 0     | 0     | 0     | 0    | 60    | 189   |
| 23 | 1951       | 302   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 344   | 54    |
| 24 | 1952       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 1,273 | 104   |
| 25 | 1953       | 1,350 | 472   | 1,610 | 1,509 | 0     | 175   | 1,896 | 1,457 | 0     | 0     | 0     | 0     | 0    | 379   | 602   |
| 26 | 1954       | 1,060 | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 90    |
| 27 | 1955       | 950   | 0     | 0     | 1,017 | 337   | 1,767 | 1,416 | 2,267 | 0     | 0     | 0     | 0     | 0    | 496   | 535   |
| 28 | 1956       | 800   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 293   | 92    |

**Table 6.1.2**  
**4(h)(10)(C) Power Purchase Amounts By Water Year**  
**Fiscal Year 2021**

| A          | B    | C     | D    | E     | F     | G     | H     | I     | J     | K     | L     | M    | N    | O     | P     |
|------------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Energy-aMW | Oct  | Nov   | Dec  | Jan   | Feb   | Mar   | Ap1   | Ap2   | May   | Jun   | Jul   | Ag1  | Ag2  | Sep   | Avg   |
| 29         | 1957 | 827   | 225  | 0     | 0     | 461   | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 889   | 197   |
| 30         | 1958 | 1,366 | 420  | 782   | 0     | 0     | 0     | 0     | 0     | 0     | -16   | 0    | 0    | 740   | 276   |
| 31         | 1959 | 1,062 | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 90    |
| 32         | 1960 | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | -272  | 0    | 0    | 654   | 31    |
| 33         | 1961 | 1,080 | 0    | 350   | 0     | 0     | 0     | 11    | 0     | 0     | 0     | 0    | 0    | 889   | 195   |
| 34         | 1962 | 1,449 | 182  | 459   | 0     | 0     | 925   | 0     | 0     | 0     | 0     | 0    | 0    | 814   | 322   |
| 35         | 1963 | 524   | 0    | 0     | 0     | 0     | 759   | 735   | 1,911 | 0     | 0     | 0    | 0    | 137   | 229   |
| 36         | 1964 | 1,425 | 174  | 393   | 280   | 0     | 1,481 | 0     | 790   | 0     | 0     | 0    | 0    | 0     | 350   |
| 37         | 1965 | 212   | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 614   | 68    |
| 38         | 1966 | 775   | 17   | 0     | 0     | 0     | 840   | 0     | 23    | 200   | 0     | 0    | 0    | 690   | 213   |
| 39         | 1967 | 1,354 | 481  | 0     | 0     | 0     | 0     | 0     | 1,799 | 0     | 0     | 0    | 0    | 133   | 239   |
| 40         | 1968 | 948   | 0    | 0     | 0     | 0     | 0     | 1,504 | 1,946 | 306   | 0     | 0    | 0    | 0     | 248   |
| 41         | 1969 | 39    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 725   | 63    |
| 42         | 1970 | 947   | 39   | 997   | 0     | 0     | 62    | 1,430 | 1,976 | 0     | 0     | -60  | 0    | 1,055 | 398   |
| 43         | 1971 | 1,282 | 430  | 271   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 78    | 174   |
| 44         | 1972 | 794   | 28   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 70    |
| 45         | 1973 | 829   | 0    | 244   | 0     | 0     | 755   | 2,397 | 3,185 | 2,568 | 496   | 97   | 322  | 56    | 660   |
| 46         | 1974 | 831   | 578  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 118   |
| 47         | 1975 | 1,549 | 504  | 955   | 0     | 0     | 0     | 497   | 662   | 0     | 0     | 0    | 0    | 0     | 302   |
| 48         | 1976 | 0     | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 0     |
| 49         | 1977 | 747   | 420  | 1,386 | 982   | 1,102 | 2,024 | 2,227 | 3,117 | 2,969 | 2,004 | 582  | -120 | -68   | 1,333 |
| 50         | 1978 | 985   | -259 | 229   | 0     | 0     | 1,024 | 0     | 0     | 0     | 0     | 0    | -25  | 0     | 168   |
| 51         | 1979 | 389   | 189  | 1,592 | 1,029 | 324   | 0     | 318   | 2,599 | 0     | 230   | 730  | 462  | -27   | 512   |
| 52         | 1980 | 936   | 822  | 1,803 | 1,128 | 866   | 1,513 | 0     | 144   | 0     | 0     | -203 | 106  | -98   | 580   |
| 53         | 1981 | 1,019 | 80   | 0     | 0     | 0     | 651   | 1,409 | 3,885 | 0     | 0     | 0    | 0    | 137   | 377   |
| 54         | 1982 | 1,173 | 0    | 219   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 118   |
| 55         | 1983 | 137   | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 12    |
| 56         | 1984 | 988   | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0     | 84    |

**Table 6.1.2**  
**4(h)(10)(C) Power Purchase Amounts By Water Year**  
**Fiscal Year 2021**

| A          | B              | C          | D          | E          | F          | G          | H          | I          | J            | K          | L          | M         | N          | O          | P          |            |
|------------|----------------|------------|------------|------------|------------|------------|------------|------------|--------------|------------|------------|-----------|------------|------------|------------|------------|
| Energy-aMW | Oct            | Nov        | Dec        | Jan        | Feb        | Mar        | Ap1        | Ap2        | May          | Jun        | Jul        | Ag1       | Ag2        | Sep        | Avg        |            |
| 57         | 1985           | 1,008      | 0          | 157        | 0          | 0          | 610        | 0          | 0            | 0          | -37        | 58        | 854        | 92         | 122        | 202        |
| 58         | 1986           | 314        | -372       | 6          | 0          | 0          | 0          | 0          | 0            | 0          | 0          | -6        | 0          | -51        | 963        | 73         |
| 59         | 1987           | 1,513      | -24        | 0          | 597        | 1,169      | -341       | 912        | 1,163        | 0          | 186        | 655       | 487        | -3         | 353        | 443        |
| 60         | 1988           | 1,065      | 944        | 2,192      | 3,636      | 1,171      | 1,816      | 1,246      | 3,360        | 2,091      | 824        | -184      | 0          | 0          | 82         | 1,332      |
| 61         | 1989           | 715        | -36        | 838        | 2,685      | 2,103      | 0          | 0          | 0            | 0          | -687       | -775      | 285        | 0          | 227        | 426        |
| 62         | 1990           | 1,005      | 546        | 0          | 0          | 0          | 0          | 0          | 0            | 0          | 0          | 0         | 0          | 0          | 851        | 200        |
| 63         | 1991           | 1,448      | 0          | 0          | 0          | 0          | 0          | 0          | 0            | 0          | 0          | 0         | 0          | 0          | 725        | 183        |
| 64         | 1992           | 1,438      | 178        | 2,013      | 1,104      | 979        | 694        | 1,420      | 1,941        | -72        | 994        | 718       | 606        | -173       | 177        | 842        |
| 65         | 1993           | 696        | -54        | 1,760      | 2,610      | 2,256      | 409        | 1,219      | 2,692        | 0          | 0          | 0         | -130       | 0          | 133        | 800        |
| 66         | 1994           | 1,019      | 277        | 1,342      | 3,109      | 522        | 1,715      | 1,148      | 2,636        | 656        | 1,174      | 0         | 167        | 0          | 195        | 1,004      |
| 67         | 1995           | 948        | 1,008      | 1,286      | 1,331      | 0          | 0          | 0          | 4,387        | 0          | 0          | 0         | 0          | 0          | 183        | 581        |
| 68         | 1996           | 119        | 0          | 0          | 0          | 0          | 0          | 0          | 0            | 0          | 0          | 0         | 0          | 0          | 256        | 31         |
| 69         | 1997           | 1,160      | 0          | 0          | 0          | 0          | 0          | 0          | 0            | 0          | 0          | 0         | 0          | 0          | 0          | 99         |
| 70         | 1998           | 0          | 0          | 173        | 0          | 0          | 0          | 893        | 1,768        | 0          | 0          | 0         | 0          | 0          | 906        | 199        |
| 71         | 1999           | 1,356      | 693        | 0          | 0          | 0          | 0          | 0          | 0            | 0          | 0          | 0         | 0          | 0          | 140        | 184        |
| 72         | 2000           | 1,142      | 0          | 0          | 0          | 0          | 0          | 0          | 0            | 0          | 305        | 0         | 0          | -32        | 930        | 197        |
| 73         | 2001           | 1,269      | 501        | 1,561      | 1,407      | 1,469      | 1,540      | 2,268      | 3,281        | 2,492      | 2,192      | 329       | -70        | -147       | 1,242      | 1,385      |
| 74         | 2002           | 1,146      | -109       | 898        | 1,917      | 1,811      | 750        | 0          | 0            | 0          | 0          | 0         | -123       | -56        | 772        | 586        |
| 75         | 2003           | 1,097      | 128        | 1,488      | 1,904      | 463        | 0          | 0          | 102          | 917        | 0          | -5        | 961        | 0          | 720        | 608        |
| 76         | 2004           | 955        | -143       | 317        | 2,126      | 1,072      | 956        | 0          | 2,893        | 348        | 0          | 0         | 472        | 0          | 0          | 609        |
| 77         | 2005           | 694        | 0          | 0          | 0          | 0          | 266        | 1,972      | 2,324        | 11         | 0          | 0         | 0          | 0          | 1,120      | 351        |
| 78         | 2006           | 1,244      | 0          | 215        | 0          | 0          | 0          | 0          | 0            | 0          | 0          | 0         | -135       | -202       | 1,545      | 237        |
| 79         | 2007           | 1,401      | -404       | 152        | 0          | 0          | 0          | 0          | 300          | 0          | 0          | -4        | 203        | -27        | 1,737      | 261        |
| 80         | 2008           | 1,084      | -22        | 1,026      | 1,122      | 667        | 310        | 383        | 2,288        | 0          | 0          | 0         | 0          | 0          | 774        | 524        |
| <b>81</b>  | <b>Average</b> | <b>911</b> | <b>193</b> | <b>617</b> | <b>690</b> | <b>404</b> | <b>449</b> | <b>499</b> | <b>1,017</b> | <b>349</b> | <b>150</b> | <b>56</b> | <b>104</b> | <b>-18</b> | <b>393</b> | <b>418</b> |
| <b>82</b>  | <b>Median</b>  | <b>968</b> | <b>9</b>   | <b>237</b> | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>0</b>   | <b>6</b>     | <b>0</b>   | <b>0</b>   | <b>0</b>  | <b>0</b>   | <b>0</b>   | <b>249</b> | <b>254</b> |

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**7. FEDERAL TIER 1 SYSTEM FIRM CRITICAL OUTPUT .....101**

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**Table 7.1.1**  
**Federal Tier 1 System Firm Critical Output Projection - 2-Year Average**  
**2020 RHWM Process for BP-20 Rate Period**  
**S156-RC-20180716-160101**

|           | A   | B            | C            | D              |
|-----------|---|--------------|--------------|----------------|
| <b>1.</b> | <b>TISFCO Projections Energy in aMW</b>                                     | <b>2020</b>  | <b>2021</b>  | <b>Average</b> |
| 2.        | Total Federal System Hydro Generation ( <i>TRM Table 3.1</i> )              | 6,542        | 6,593        | 6,567          |
| 3.        | Total Designated Non-Federally Owned Resources ( <i>TRM Table 3.2</i> )     | 1,165        | 1,039        | 1,102          |
| 4.        | Total Designated BPA Contract Purchases ( <i>TRM Table 3.3</i> )            | 138          | 138          | 138            |
| 5.        | Total Designated System Obligations ( <i>TRM Table 3.4</i> )                | -859         | -843         | -851           |
| <b>6.</b> | <b>Federal Tier 1 System Firm Critical Output (<i>sum of Lines 2-5</i>)</b> | <b>6,985</b> | <b>6,926</b> | <b>6,955</b>   |

**Table 7.1.2**  
**Federal System Hydro Generation for Use in the T1SFCO Calculation**  
**2020 RHW Process for BP-20 Rate Period**  
**TRM Table 3.1**  
**S156-RC-20180716-160101**

|     | A                | B       | C       | D       |
|-----|------------------|---------|---------|---------|
| 1.  | Regulated Hydro  | 2020    | 2021    | Average |
| 2.  | Albeni Falls     | 22.4    | 24.1    | 23.2    |
| 3.  | Bonneville       | 385.3   | 389.1   | 387.2   |
| 4.  | Chief Joseph     | 1,124.0 | 1,124.7 | 1,124.4 |
| 5.  | Dworshak         | 140.0   | 138.5   | 139.2   |
| 6.  | Grand Coulee     | 1,969.5 | 1,970.6 | 1,970.0 |
| 7.  | Hungry Horse     | 81.3    | 81.3    | 81.3    |
| 8.  | Ice Harbor       | 134.9   | 142.7   | 138.8   |
| 9.  | John Day         | 736.6   | 748.4   | 742.5   |
| 10. | Libby            | 184.1   | 184.3   | 184.2   |
| 11. | Little Goose     | 146.4   | 147.8   | 147.1   |
| 12. | Lower Granite    | 124.3   | 141.5   | 132.9   |
| 13. | Lower Monumental | 142.4   | 142.4   | 142.4   |
| 14. | McNary           | 430.7   | 431.3   | 431.0   |
| 15. | The Dalles       | 572.0   | 577.6   | 574.8   |

**Table 7.1.2**  
**Federal System Hydro Generation for Use in the T1SFCO Calculation**  
**2020 RHW Process for BP-20 Rate Period**  
**TRM Table 3.1**  
**S156-RC-20180716-160101**

|            | A   | B              | C              | D              |
|------------|---|----------------|----------------|----------------|
| 16.        | <b>Independent Hydro</b>  | <b>2020</b>    | <b>2021</b>    | <b>Average</b> |
| 17.        | Anderson Ranch  | 12.2           | 12.2           | 12.2           |
| 18.        | Big Cliff   | 10.0           | 10.0           | 10.0           |
| 19.        | Black Canyon  | 6.2            | 6.2            | 6.2            |
| 20.        | Boise River Diversion   | 1.2            | 1.2            | 1.2            |
| 21.        | Chandler  | 6.1            | 6.1            | 6.1            |
| 22.        | Cougar  | 19.0           | 19.1           | 19.1           |
| 23.        | Cowlitz Falls   | 26.5           | 26.5           | 26.5           |
| 24.        | Detroit   | 41.7           | 41.8           | 41.8           |
| 25.        | Dexter  | 9.3            | 9.3            | 9.3            |
| 26.        | Foster  | 12.3           | 12.4           | 12.4           |
| 27.        | Green Peter   | 27.1           | 27.2           | 27.1           |
| 28.        | Green Springs - USBR  | 7.3            | 7.3            | 7.3            |
| 29.        | Hills Creek   | 17.9           | 17.9           | 17.9           |
| 30.        | <i>Idaho Falls - City Plant (expired 9/30/2016)</i>                               |                |                |                |
| 31.        | <i>Idaho Falls - Lower Plants #1 &amp; #2 (expired 9/30/2016)</i>                 |                |                |                |
| 32.        | <i>Idaho Falls - Upper Plant (expired 9/30/2016)</i>                              |                |                |                |
| 33.        | Lookout Point   | 36.1           | 36.2           | 36.1           |
| 34.        | Lost Creek  | 30.1           | 30.1           | 30.1           |
| 35.        | Minidoka  | 10.7           | 10.7           | 10.7           |
| 36.        | Palisades   | 67.3           | 67.4           | 67.4           |
| 37.        | Roza  | 6.9            | 6.9            | 6.9            |
| <b>38.</b> | <b>Total Tier 1 Federal System Hydro Generation (sum of Lines 2-15 and 17-37)</b> | <b>6,541.8</b> | <b>6,592.7</b> | <b>6,567.2</b> |

<sup>11</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.1, page 121.

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**Table 7.1.3**  
**Designated Non-Federally Owned Resources for Use in the T1SFCO Calculation**  
**2020 RHW Process for BP-20 Rate Period**  
**TRM Table 3.2**  
**S156-RC-20180716-160101**

|            | A  | B              | C              | D              |
|------------|--|----------------|----------------|----------------|
| 1.         | Project  | 2020           | 2021           | Average        |
| 2.         | Ashland Solar Project ( <i>expires 5/31/2020</i> )                               | 0.0            | 0.0            | 0.0            |
| 3.         | Columbia Generating Station  | 1,116.0        | 993.7          | 1,054.8        |
| 4.         | Condon Wind Project ( <i>expires 9/30/2022</i> )                                 | 11.7           | 11.7           | 11.7           |
| 5.         | Dworshak/Clearwater Small Hydropower   | 2.6            | 2.6            | 2.6            |
| 6.         | Foote Creek 1 ( <i>expires 4/2022</i> )  | 3.6            | 3.6            | 3.6            |
| 7.         | Foote Creek 2 ( <i>expired 2014</i> )  |                |                |                |
| 8.         | Foote Creek 4 ( <i>expires 10/1/2020</i> )                                       | 4.0            | 0.0            | 2.0            |
| 9.         | <i>Fourmile Hill Geothermal (Not included)</i>                                   | 0.0            | 0.0            | 0.0            |
| 10.        | Georgia-Pacific Paper (Wauna) ( <i>expired 4/5/2016</i> )                        |                |                |                |
| 11.        | Klondike I ( <i>expires 4/2022</i> )   | 5.6            | 5.7            | 5.6            |
| 12.        | Stateline Wind Project ( <i>expires 12/2026</i> )                                | 21.2           | 21.2           | 21.2           |
| 13.        | White Bluffs Solar   | 0.0            | 0.0            | 0.0            |
| <b>14.</b> | <b>Total Designated Non-Federally Owned Resources (<i>sum of Lines 2-13</i>)</b> | <b>1,164.7</b> | <b>1,038.5</b> | <b>1,101.6</b> |

<sup>11</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.2, page 122.

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**Table 7.1.4**  
**Designated BPA Contract Purchases for Use in the T1SFCO Calculation**  
**2020 RHW Process for BP-20 Rate Period**  
**TRM Table 3.3**  
**S156-RC-20180716-160101**

| A   | B   | C          | D            | E            |              |
|-----|---|------------|--------------|--------------|--------------|
| 1.  | Contract Purchases  | Contract # | 2020         | 2021         | Average      |
| 2.  | Priest Rapids CER for Canada  | 97PB-10099 | 28.6         | 28.6         | 28.6         |
| 3.  | Rock Island #1 CER for Canada   | 97PB-10102 | 18.3         | 18.3         | 18.3         |
| 4.  | Rock Reach CER for Canada   | 97PB-10103 | 37.7         | 37.7         | 37.7         |
| 5.  | Wanapum CER for Canada  | 97PB-10100 | 28.6         | 28.6         | 28.6         |
| 6.  | Wells CER for Canada  | 97PB-10101 | 23.4         | 23.4         | 23.4         |
| 7.  | BCHP to BPA PwrS  | 99PB-22685 | 1.0          | 1.0          | 1.0          |
| 8.  | BCHP to BPA LCA ( <i>settled financially</i> )                            | 99PB-22685 |              |              |              |
| 9.  | PASA to BPA Pk Repl ( <i>expired 4/30/2015</i> )                          | 94BP-93658 |              |              |              |
| 10. | PASA to BPA S/N/X ( <i>expired 4/30/2015</i> )                            | 94BP-93658 |              |              |              |
| 11. | PASA to BPA Xchg Nrg ( <i>expired 4/30/2015</i> )                         | 94BP-93658 |              |              |              |
| 12. | RVSD to BPA Pk Repl ( <i>expired 4/30/2016</i> )                          | 94BP-93958 |              |              |              |
| 13. | RVSD to BPA Seas Xchg ( <i>expired 4/30/2016</i> )                        | 94BP-93958 |              |              |              |
| 14. | RVSD to BPA Xchg Nrg ( <i>expired 4/30/2016</i> )                         | 94BP-93958 |              |              |              |
| 15. | PPL to BPA SNX (Spring Return) ( <i>expired 6/1/2014</i> )                | 94BP-94332 |              |              |              |
| 16. | PPL to BPA SPX (Summer Return) ( <i>expired 6/1/2014</i> )                | 94BP-94332 |              |              |              |
| 17. | <b>Total Designated BPA Contract Purchases (<i>sum of Lines 2-16</i>)</b> |            | <b>137.7</b> | <b>137.7</b> | <b>137.7</b> |

<sup>11</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.3, page 123.

**Table 7.1.5**  
**Designated BPA System Obligations for Use in the T1SFCO Calculation**  
**2020 RHW M Process for BP-20 Rate Period**  
**TRM Table 3.4 (Negative numbers indicate obligations)**  
**S156-RC-20180716-160101**

| A   | B  | C                         | D      | E      |         |
|-----|--|---------------------------|--------|--------|---------|
| 1.  | System Obligation                              | Contract #                | 2020   | 2021   | Average |
| 2.  | BPA to BRCJ Chief Joseph                       | 14-03-17506; 14-03-49151  | -8.8   | -8.8   | -8.8    |
| 3.  | BPA to BRCB Columbia Basin Project             | Ibp-4512; 14-03-001-12160 | -139.2 | -139.5 | -139.3  |
| 4.  | BPA to BR CR Crooked River Project             | 14-03-73152               | -0.7   | -0.7   | -0.7    |
| 5.  | BPA to BROP Owyhee Project                     | EW-78-Y-83-00019          | -1.5   | -1.5   | -1.5    |
| 6.  | BPA to BRRP Rathdrum Prairie Project           | 14-03-49151               | -0.8   | -0.8   | -0.8    |
| 7.  | BPA to BRSID Southern Idaho Projects           | EW-78-Y-83-00019          | -19.8  | -19.9  | -19.9   |
| 8.  | BPA to BRSIN Spokane Indian Develop.           | 14-03-49151               | -0.3   | -0.3   | -0.3    |
| 9.  | BPA to BRSV Spokane Valley                     | 14-03-63656               | -0.7   | -0.7   | -0.7    |
| 10. | BPA to BRTD The Dallas Reclamation Project     | 14-03-32210               | -2.0   | -2.0   | -2.0    |
| 11. | BPA to BRTV Tualatin Project                   | 14-03-49151               | -0.8   | -0.8   | -0.8    |
| 12. | BPA to BRUB Umatilla Basin Project             | 10GS-75345                | -2.5   | -2.5   | -2.5    |
| 13. | BPA to BRYK Yakima Project                     | DE-MS79-88BP92591         | -1.8   | -1.8   | -1.8    |
| 14. | BPA to BCHP LCA ( <i>settled financially</i> ) | 99PB-22685                | 0.0    | 0.0    | 0.0     |
| 15. | BPA to BCHA Can Ent                            | 99EO-40003                | -453.5 | -438.9 | -446.2  |
| 16. | BPA to BCHA NTSA                               | 12PG-10002                | -10.7  | -10.7  | -10.7   |



**Table 7.1.5**  
**Designated BPA System Obligations for Use in the T1SFCO Calculation**  
**2020 RHW M Process for BP-20 Rate Period**  
**TRM Table 3.4 (Negative numbers indicate obligations)**  
**S156-RC-20180716-160101**

| A          | B  | C          | D             | E             |               |
|------------|--|------------|---------------|---------------|---------------|
| 1.         | System Obligation  | Contract # | 2020          | 2021          | Average       |
| 17.        | BPA to BHEC 2012PSC (expired 6/30/2017)                        | 97PB-10051 |               |               |               |
| 18.        | BPA to PASA C/N/X (expired 4/30/2015)                          | 94BP-93658 |               |               |               |
| 19.        | BPA to PASA S/N/X (expired 4/30/2015)                          | 94BP-93658 |               |               |               |
| 20.        | BPA to RVSD C/N/X (expired 4/30/2016)                          | 94BP-93958 |               |               |               |
| 21.        | BPA to RVSD Seas Xchg (expired 4/30/2016)                      | 94BP-93958 |               |               |               |
| 22.        | Federal Intertie Losses (Calculated: 3.0% of Intertie Sales)   | n/a        | 0.0           | 0.0           | 0.0           |
| 23.        | BPA to AVWP WP3 S (expires 6/30/2019)                          | 85BP-92186 |               |               |               |
| 24.        | BPA to PPL SNX (Spring Delivery) (expired 6/1/2014)            | 94BP-94332 |               |               |               |
| 25.        | BPA to PPL SPX (Summer Delivery) (expired 6/1/2014)            | 94BP-94332 |               |               |               |
| 26.        | BPA to PSE WP3 S (expired 6/30/2017)                           | 85BP-92185 |               |               |               |
| 27.        | BPA to PSE Upper Baker 2                                       | 09PB-12126 | -1.3          | -1.3          | -1.3          |
| 28.        | BPAP to BPAT (Dittmer/Substation Service)                      | 09PB-12128 | -9.4          | -9.4          | -9.4          |
| 29.        | Federal Power Trans. Losses                                    | n/a        | -235.7        | -233.4        | -234.5        |
| 30.        | Slice Transmission Loss Returns                                | n/a        | 30.0          | 29.7          | 29.9          |
| <b>31.</b> | <b>Total Designated System Obligations (sum of Lines 2-30)</b> |            | <b>-859.4</b> | <b>-843.2</b> | <b>-851.3</b> |

<sup>11</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.4, page 124-125.

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**8. HYDRO REGULATION ASSUMPTIONS .....113**

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**STUDY NUMBER:** 18\_RateCase20\_Final & 18\_RateCase21\_Final

**Requested By:** BPA Rates Process

**Due Date:** June 21, 2019

**Purpose of Study:** This is an 80-year continuous study of the system operation for the Final Proposal BP-20 Rate Case for FY 2020 and FY 2021.

**Study Directories:**

**DOP Step:** X:\RATES\18\_RateCase20\_Final\DOP20\_RateCase  
\Study\_1

**AER Step:** X:\RATES\18\_RateCase20\_Final\AER &  
X:\RATES\18\_RateCase21\_Final\AER

**OPER Step:** X:\RATES\18\_RateCase20\_Final\OPER\_final &  
X:\RATES\18\_RateCase21\_Final\OPER\_final

**Name of Regulator:** Jennie Tran

The Rate Case HYDSIM studies are run in three steps or layers. The first step determines the Canadian Treaty operations; the second step includes those Treaty operations and adds a layer that determines the U.S. non-federal operations and an approximation of the federal operations; and the third step includes those operations and adds a layer of fine-tuning to determine the federal operations.

There are two separate 80-year studies—one for Fiscal Year (FY) 2020 (October 2019 through September 2020) and one for FY 2021 (October 2020 through September 2021). For simplicity the two 80-year studies are often referred to as a singular study, and the three steps are often referred to as a singular step. However, in reality there is a Detailed Operating Plan (DOP) Step for each one, an Actual Energy Regulation (AER) Step for each one, and an operational (OPER) Step for each one, which is a total of six studies, and these are collectively referred to as the HYDSIM study for the Rate Case.

## DOP STEP

- This Step is used to determine the Canadian Treaty project elevations following procedures from the Columbia River Treaty.
- Since the official DOP studies for Treaty storage operations are typically completed just 1-2 months prior to the operating year, they are not available in time for the rate case study. Therefore, surrogate DOP studies are used to reflect expected study results and determine the Canadian Treaty storage operations for the AER step.
- The surrogate DOP studies start with the official Assured Operating Plans (AOP): AOP20 and AOP21 (roll back from AOP22) studies. The surrogate DOP converts the AOP from perfect-knowledge to forecast-based and from operating-year to fiscal-year, and includes all the data updates that are expected to be included in the official DOP studies. These studies were run by BPA on January 9, 2018 for this BP-20 Final Proposal Rate Case.
- These updates include plant data from the Pacific Northwest Coordination Agreement (PNCA) 2019 data submittal. This continuous 80-year surrogate DOP study begins on October 1, 1928, and ends on September 30, 2008.

## AER STEP

- This AER Step is used to determine the project minimum storage elevations using load equal to the PNCA 2019 operating year (OY19) Firm Energy Load Carrying Capability (FELCC) and unlimited secondary market. Minimum elevations from the AER Step are input into the OPER Step.
- This is a **continuous** 80-year study based on the PNCA OY19 data submittal.
- The Coordinated System generation does not include the Tacoma projects, PacifiCorp projects, Brownlee, Oxbow, and Hells Canyon.
- **Streamflow Data** are from “Modified Streamflows 2010 Level of Irrigation”. They contain estimated irrigation depletions from the year 2010. (See “2010 Level Modified Streamflow: Seasonal Volumes and Statistics, 1928-2008” and “2010 Level Modified Streamflow, 1928-2008” both dated August 2011.) Adjustments to these 2010 level modified streamflows are made in this study according to the Bureau of Reclamation’s updated **Grand Coulee pumping schedule** for the Columbia Basin Project in the PNCA OY19 data submittal.
- **Plant Data** are from the PNCA OY19 data submittal.
- **Loads** are from the FELCC OY19 Critical Period study run by the Northwest Power Pool (NWPP) for the PNCA. The NWPP study has a one-year critical period (September 1, 1936 through April 30, 1937). Thus, only one year of FELCC values are used for all water conditions. This study reflects coordination between PNCA parties in meeting PNCA FELCC. Therefore, generation from projects owned by non-PNCA parties (Brownlee, Oxbow, Hells Canyon, and Canadian projects) is not used to meet PNCA FELCC in these studies. Also, in this study the generation from Tacoma and PacifiCorp projects is not included because they are not in the PNCA Coordinated System FELCC computation. The PNCA hydro FELCC includes Hydro-Independent generation from 1936-37, so BPA revises the FELCC to reflect the Hydro-Independent generation for each of the 80 years and uses this modified FELCC as the hydro-residual load required for this study. There is no limit assumed in the secondary market, which is consistent with PNCA studies.
- **Unit Outages** for all projects are from the PNCA OY19 data.
- **Initial Contents** for all projects came from the September 30, 1929, storage ending content from the final Rates study for 2007 (X:\RATES\06Rate07-09\04Rate\_07\AER), except Mica, Arrow, and Duncan are initialized to the content from the surrogate DOP studies (X:\RATES\18\_RateCase20\_Final\DOP20\_RateCase\Study\_1). The initial conditions do not significantly affect the study results since this is a continuous study.
- **Critical Rule Curves (CRCs)** are in accordance with PNCA OY19 adopted system critical rule curves.
- **Flood Control Rule Curves**, also known as Upper Rule Curves (URCs), are the highest contents allowed for each reservoir and supersede all other reservoir elevation and content operating objectives. The curves are based on: forecasts (not actuals); shifting some of Dworshak’s requirement to Grand Coulee when possible; a ratio of 3.6/4.08 Arrow/Mica split; and variable flood control (VarQ) at Hungry Horse and Libby. They were provided by the Corps of Engineers to BPA in March 2013 for 1929-2008. These flood control curves include the variable flood control in December at Libby, BC Hydro’s updated storage reservation diagram for Duncan, and a 1600 cubic feet per second (cfs) minimum flow at Dworshak. The Mica, Arrow, and Duncan flood control requirements are from the surrogate DOP20 study. The flood control data set was updated in November 2015 to reflect the new storage elevation table at Coulee. The flood control curves for Grand Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan to more closely reflect the methodology used in real-time operations.

- **Variable Energy Content Curves (VECCs)** are calculated using Power Discharge Requirements (PDRs), distribution factors, and forecast errors from the PNCA OY19 planning process. The Grand Coulee Energy Content Curve (ECC) lower limits are 1225 feet (441.5 ksf) January through April, and 1240 feet (884.4 ksf) in May. The unit 'ksf' is a volume equal to 1000 cfs for 24 hours. The Canadian projects' surrogate DOP20 VECCs are based on forecasts, the ratio of 3.6/4.08 Arrow/Mica split, non-shifted flood control, and VarQ flood control at Hungry Horse.

**Project Specific Data:**

- **Mica, Duncan, and Arrow** are fixed to the 80-year surrogate DOP20 study.
- **Libby** operates to meet Coordinated System FELCC in October and November with a minimum flow of 4,000 cfs. Libby has a maximum outflow of 4,000 cfs January through April and 25,000 cfs May through August. The 25,000 cfs May through August maximum outflow is powerhouse hydraulic capacity without spill, but a higher outflow including spill can be provided to maintain the required VarQ flood control space. Libby has a minimum outflow of 6,000 cfs May 15 through September, and target outflows of 6,000 cfs in September and 4,000 cfs in October. Libby can be drafted to meet FELCC in October and November as long as it does not draft below the December Variable URC. When the December forecast at Libby for April through August is less than 5500 thousand acre feet (KAF), the flood control at Libby in December is 2426.7 feet (1805.8 ksf). When the forecast is greater than 5900 KAF, the flood control in December is 2411.0 feet (1501.9 ksf). The flood control data is interpolated between 1805.8 ksf and 1501.9 ksf when the forecast is between 5500 and 5900 KAF. January-April, Libby operates to minimum flow (4,000 cfs) or at the flood control URC in attempt to reach the flood control URC on April 15 (as a surrogate for the Biological Opinion's (BiOp) April 10 objective). During May and June Libby operates for Sturgeon and during May 15 through September 30 it operates for Bull Trout. Sturgeon and Bull Trout flow requirements May through August are based on the May final April-August Kuehl-Moffitt forecast at Libby and are summarized as follows from the PNCA OY19 Corps of Engineers data submittal based on the U.S. Fish and Wildlife Service BiOp dated February 18, 2006, where MAF is one million acre-feet and KAF is one thousand acre-feet of water volume.

| <u>Libby May1 Apr-Aug</u><br><u>Forecast Volume (MAF)</u> | <u>Sturgeon Flow Volume</u><br><u>Provided from Libby (KAF)</u> |
|---|---|
| <4800   | 0   |
| 4800-5400   | 800   |
| 5400-6350   | 800-1120  |
| 6350-7400   | 1120-1200   |
| 7400-8500   | 1200  |
| 8500-8900   | 1200-1600   |
| >8900   | 1600  |

| <u>Libby May1 Apr-Aug</u><br><u>Forecast Interval (MAF)</u> | <u>Bull Trout Minimum Flow</u><br><u>May15-Aug31 (CFS)</u> |
|---|--|
| <4800   | 6000   |
| 4800-6000   | 7000   |
| 6000-6700   | 8000   |
| >6700   | 9000   |

In years when the May 1 forecast of April through August volume at The Dalles is less than 72.2 MAF (the lowest 20<sup>th</sup> percentile), the August 31 draft limit is 2439 feet (2061.3 ksf) and in years when the forecast is greater than or equal to 72.2 MAF, the August 31 draft limit is 2449 feet (2280.3 ksf). Libby can draft below the August draft limit to meet the Bull Trout flow objective. The project attempts to operate along a computed straight line between the June 30 content and August 31 draft limit to minimize occurrences of a second peak flow in the summer. The summer draft is then shaped to provide flat flows July through the first half of August where possible.

- **Kootenay Lake** is operated as necessary, up to free flow, to maintain the lake level below the International Joint Commission (IJC) rule curve and the calculated “allowable elevation at Queens Bay”. After August 31, the lake level may rise to elevation 1745.32 at the Queens Bay gage. This maximum elevation at Queens Bay is in effect through January 7. After January 7 the lake will be lowered to elevation 1744 on February 1, elevation 1742.4 on March 1, and 1739.32 on May 1. From June 1 through August 31, after the lake exceeds elevation 1739.32 feet at the Queens Bay gage, the lake shall be operated using the “allowable elevation” calculation to determine the Queens Bay maximum allowable elevation until the elevation at the Nelson gage drafts back to 1743.32 feet.
- **Hungry Horse** operates to meet the following minimum flow requirements at the project and at Columbia Falls as shown in the PNCA OY19 data submittal. The minimum flows are determined each month based on the January, February, and March forecasts of April-August streamflow volumes. The March forecast also determines the minimum flows for April through December.

| <u>Hungry Horse</u><br><u>Apr-Aug Forecast (KAF)</u> | <u>Hungry Horse</u><br><u>Minimum Flow (CFS)</u> | <u>Columbia Falls</u><br><u>Minimum Flow (CFS)</u> |
|--|--|--|
| <1190  | 400  | 3200   |
| 1190-1790  | 400-900  | 3200-3500  |
| >1790  | 900  | 3500   |

Hungry Horse will draft to 3555.7 feet (1453.5 ksf) in October and November and 3549.2 feet (1376.8 ksf) in December for winter flood control. However, due to the minimum flow requirement at Columbia Falls, Hungry Horse often operates below these elevations in October through December. From January through March, Hungry Horse operates between the variable draft limit, which assures a 75 percent chance of filling to April flood control elevation and the VarQ flood control elevation, except in periods when minimum flow requirements draft the project deeper. The variable draft limits are calculated using assumed inflows that are exceeded 75 percent of the time, the minimum outflow, and the requirement to be at flood control elevation on April 10. Hungry Horse operates to the draft limit of 3545 feet (1330.2 ksf) or VarQ flood control upper rule curve in April. In May and June, Hungry Horse operates on flood control when possible but drafts below flood control to meet minimum flows when necessary. January through April outflows are reshaped to reduce forced spill. In years when the May 1 April-August volume forecast for The Dalles is less than 72.2 MAF (20<sup>th</sup> percentile from the COE’s PNCA OY18 data submittal), the project operates along a computed straight line between the June 30 content and a September 30 draft limit of 3540.0 feet (1275.1 ksf) to minimize occurrences of a second peak flow in the summer. In years when the May 1 April-August volume forecast for The Dalles is greater than or equal to 72.2 MAF (20<sup>th</sup> percentile), the September 30 draft limit is 3550.0 feet (1386.7 ksf). The summer draft is then shaped to provide flat flows July through September where possible. The maximum discharge at Hungry Horse is 9,000 cfs during September through April 15, and 11,956 cfs during April 16 through August 31, unless the URC causes more discharge.



- **Albeni Falls** targets 2062 feet (559.1 ksf) from June through August, 2060 feet (465.7 ksf) in September, 2056 feet (279.0 ksf) in October, 2051 feet (57.6 ksf) November through March, 2056 feet (279.0 ksf) in April, and 2060 feet (465.7 ksf) in May.
- **Kerr** targets 2891 feet (488.6 ksf) in October, 2889.6 feet (401.5 ksf) in November, 2888 feet (302.8 ksf) in December, 2886.6 feet (217.1 ksf) in January, 2885.7 feet (162.3 ksf) in February, 2885.4 feet (144.1 ksf) in March, 2884.4 feet (83.8 ksf) on April 15, 2884.3 feet (77.8 ksf) on April 30, 2890 feet (426.3 ksf) in May, full at 2893 feet (614.7 ksf) June through September.
- **Grand Coulee** operates to meet FELCC September through December subject to the draft limits of 1283 feet (2413.9 ksf) in September and October, 1275 feet (2102.4 ksf) in November, and 1270 feet (1915.1 ksf) in December. January through March, Grand Coulee can be drafted to the variable draft limit (VDL) to support Chum flow and Vernita Bar minimum flow requirements. In all years, the calculated VDL has a lower limit of 1260 feet (1553.2 ksf) in January, 1250 feet (1208.8 ksf) in February, and 1240 feet (883.8 ksf) in March. Only during years identified for drum gate maintenance, the upper limit is 1270 feet (1915.1 ksf) in February, and 1250 feet (1208.8 ksf) in March. The VDL reflects the expected April 10th URC and storage needed for the appropriate Vernita Bar minimum flow and potential drum gate maintenance requirements. These VDLs are calculated using the following data: the regulated inflows from the Hydsim model which are exceeded 85 percent of the time, perfect knowledge of the minimum outflow, and the requirement to be at flood control elevation on April 10. On April 15, Grand Coulee operates to flood control. To support the McNary and Priest Rapids April 30 through May flow targets, Grand Coulee may be drafted to the lower of flood control or 1280 feet (2295.3 ksf). In June, Grand Coulee operates to 1288 feet (2615.3 ksf) or flood control elevations. Drum gate maintenance occurs in years when the Grand Coulee April flood control elevation (based on the final February 1 water supply forecast) is less than 1255 feet (1380.2 ksf). In those drum gate years, Coulee cannot exceed 1270 ft (1915.1 ksf) in February and 1255 feet (1380.2 ksf) from March-April. The drum gate maintenance is performed at least one time in a 3-year period, two times in a 5-year period, and three times in a 7-year period. When July 1 April-August final forecast volume runoff at The Dalles is less than 92 Maf, the BiOP draft limits are 1283 feet (2413.9 ksf) in July, 1280 feet (2295.3 ksf) in August 15, and 1278 feet (2217.5 ksf) in August 31. Otherwise, the draft limits are 1285 feet (2493 ksf) in July, 1282 feet (2374.4 ksf) in August 15, and 1280 feet (2295.3 ksf) in August 31. The Lake Roosevelt Incremental Storage Releases Program (LRISRP) requires Grand Coulee to draft an additional foot in non-drought years and 1.8 feet in drought years at the end of August. At-site minimum flow is equal to 30,000 cfs. Grand Coulee is subject to a draw down limit of 1.5 feet per day when Grand Coulee is above 1260 feet (1553.3 ksf), 1.3 feet per day when Grand Coulee is between 1260 feet (1553.3 ksf) and 1240 feet (884.4 ksf), and 1.0 feet per day when Grand Coulee is below 1240 feet (884.4 ksf). During the flow augmentation period, Grand Coulee will release no more water than necessary to meet the minimum flow requirements.
- **Vernita Bar** minimum flows for December through May vary by water condition, with minimum flows established as the lower of either 68 percent of the larger of the October or November flow at Wanapum, or 70,000 cfs. Values less than 70,000 cfs are rounded to the nearest 5,000 cfs. The minimum protection level flow at Vernita Bar in any period will be no less than 36,000 cfs. These Vernita Bar flow requirements are modeled as requirements at Priest Rapids, and Grand Coulee will draft to meet them.
- **Priest Rapids** has a flow augmentation target of 135,000 cfs for Steelhead April 10 through June 30. From April 1-9 the minimum flow for Priest Rapids is the same as the Vernita Bar minimum flow.
- **Upper Snake** reservoirs and river reaches above Brownlee are not simulated in this study. Upper Snake operations are embedded in the Brownlee inflow data, as described in the 2010 Level Modified Streamflow documentation.

- **Brownlee** operates to the fixed target elevations provided to BPA from the NWPP on October 11, 2013. They are 2059 feet (373.5 ksf) in August, 2045 feet (293.8 ksf) in September, 2053 feet (337.4 ksf) in October, 2069.8 feet (441.8 ksf) in December, 2059.7 feet (377.7 ksf) in January, 2075 feet (477.8 ksf) in June, and 2062 feet (391.5 ksf) in July and supports a minimum flow requirement of 6500 cfs at Hells Canyon. Brownlee drafts to support the flow objective at Hells Canyon of between 6500 to 13000 cfs in October, and between 8000 to 13000 cfs in November for Fall Chinook operation. In February through May, Brownlee operates to flood control unless drafted for Hells Canyon minimum flow requirement.
- **Dworshak** is on minimum flow of 1,600 cfs or at flood control elevations in all periods with the exception of July-September. Dworshak's outflow is limited to 14,000 cfs in July-August except when exceeded to meet the URC where the maximum flow is 25,000 cfs. During the July-August flow augmentation period, Dworshak will release no more water than necessary to meet the Lower Granite flow target, though the target is rarely met and instead Dworshak most often operates to target elevations based on a straight-line draft between end of June and end of August target elevations: usually 1600 feet (1016.0 ksf) on June 30 and 1535 feet (497.0 ksf) on August 31. The summer draft is then shaped to provide flat flows July through August where possible. Dworshak is drafted to 1520 feet (395.8 ksf) on September 30 subject to a maximum outflow of 9,867 cfs.
- **Lower Snake projects operate at MOP** (minimum operating pool) in accordance with the PNCA data submittal. As identified in the Federal Columbia River Power System BiOp, the Corps operates Lower Granite, Little Goose, Lower Monumental, and Ice Harbor within one foot of minimum operating pool (MOP) during the period from approximately April 3 through September 30. MOPs for Lower Granite, Little Goose, Lower Monumental and Ice Harbor are elevations 733 (224.9 ksf), 633 (260.4 ksf), 537 (180.4 ksf) and 437 feet (193.4 ksf), respectively. During the rest of the year Lower Granite, Little Goose, Lower Monumental and Ice Harbor operate at elevations 738 (245.7 ksf), 638 (285.0 ksf), 540 (190.1 ksf) and 440 feet (204.8 ksf), respectively.
- **Spill for Fish Passage** is included at the eight lower Snake River and lower Columbia River projects (Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville) based on the PNCA OY19 data, summarized below. The spill is limited at times by 120 percent Total Dissolved Gas (TDG) Caps and minimum turbine flow requirements.

• **Juvenile Passage Spill and Total Dissolved Gas Caps from OY19 PNCA Planning**

| SPILL CRITERIA FOR OY19 (Source: PNCA February 1, 2018 Submittal) |  |           |                              |                                   |  |   |
|---|--|-----------|------------------------------|-----------------------------------|--|---|
|   | Spill  | Min Turb  | Min Spill                    | Days                              | Hour Ending  | Notes   |
| <b>LWG</b>  | 20 kcfs;<br>18 kcfs  | 11.6 kcfs |                              | Apr 3 - May 31;<br>Jun 1 - Aug 31 | All hours  | Gas Cap: 40 kcfs  |
| <b>LGS</b>  | 30% flow   | 11.5 kcfs | 8 kcfs if<br>flow<32<br>kcfs | Apr 3 - May 31;<br>Jun 1 - Aug 31 | All hours  | Gas Cap: Ap1-Ap2: 30 kcfs;<br>May 28 kcfs; June 30 kcfs; Jul-<br>Au2: 28 kcfs   |
| <b>LMN</b>  | spill cap;<br>17 kcfs  | 11.5 kcfs |                              | Apr 3 - May 31;<br>Jun 1 - Aug 31 | All hours  | Gas Cap: Ap1: 29 kcfs; Ap2:28<br>kcfs; May: 25 kcfs; Jun 20 kcfs;<br>Jul-Au2: 24 kcfs.                                    |
| <b>IHR</b>  | 45 kcfs day/gas cap<br>night   | 9.5 kcfs  | 8.4 kcfs                     | Apr 3 - 28;                       | All hours (0500-1800: 13 hrs<br>day/1800-0500: 11 hrs night) | Gas Cap: 97 kcfs  |
|   | 30% vs 45kcfsday/<br>gas cap night   |           |                              | Apr 29 - Jul 12;                  | All hours (0500-1800: 13 hrs<br>day/1800-0500: 11 hrs night) |   |
|   | 45 kcfs day/gas cap<br>night   |           |                              | Jul 13 - Aug 31                   | All hours (0500-1800: 13 hrs<br>day/1800-0500: 11 hrs night) |   |
| <b>MCN</b>  | 40% flow   | 50 kcfs   |                              | April 10 - Jun 15                 | All hours  | Gas Cap: Ap1-Ap2: 117 kcfs;<br>May 122 kcfs; Jun 125 kcfs ;<br>Jul 138 kcfs; Au1-Au2: 148<br>kcfs                         |
|   | 50% flow   |           |                              | Jun 16 - Aug 31                   | All hours  |   |
| <b>JDA</b>  | 30%  | 50 kcfs   | 25% of<br>flow               | Apr 10 - 27                       | All hours  | Gas Cap: Ap1 : 96 kcfs; Ap2:<br>90 kcfs; May-Jul 95 kcfs; Au1-<br>Au2: 98 kcfs  |
|   | 30% vs 40% flow  |           |                              | Apr 28 - Jul 20                   |  |   |
|   | 30%  |           |                              | Jul 21 - Aug 31                   |  |   |
| <b>TDA</b>  | 40% flow   | 50 kcfs   |                              | Apr 10 - Aug 31                   | All hours  | Gas Cap: Ap1 : 124 kcfs; Ap2:<br>131 kcfs; May 132; Jun 137<br>kcfs; Jul 139 kcfs; Au1-Au2:<br>125 kcfs                   |
| <b>BON</b>  | Min (100 kcfs or<br>gas cap)   | 30 kcfs   | 50 kcfs                      | Apr 10 - Jun 15                   | All hours  | Gas Cap: Ap1: 106 kcfs; Ap2:<br>108 kcfs; May: 109 kcfs; Jun:<br>98 kcfs; Jul: 111 kcfs ; Au1:<br>116 kcfs, Au2: 120 kcfs |
|   | Alternate 2 days<br>each: 85kcfs day/<br>121 kcfs night vs 95<br>kcfs day/95 kcfs<br>night |           |                              | Jun 16 - Aug 31                   |  |   |

LWG = Lower Granite; LGS = Little Goose; LMN = Lower Monumental; IHR = Ice Harbor; MCN = McNary;  
JDA = John Day; TDA = The Dalles; BON = Bonneville

- **Chum Flow Objectives at Bonneville** are from November 1 through April 10 and estimated at 125,000 cfs in the PNCA data submittal. Grand Coulee drafts for this Chum flow requirement with draft limits of 1275 feet (2102.4 ksfd) in November and 1270 feet (1915.1 ksfd) in December.
- **McNary Flow Targets** for April 10 through June 30 are 220,000 to 260,000 cfs based on The Dalles April 1, April-August volume runoff forecasts. When the forecast is 80 MAF or less the target is 220,000 cfs, and when the forecast is 92 MAF or greater the target is 260,000 cfs. Straight-line interpolation determines the flow targets for volume forecasts between 80 and 92 MAF. McNary summer flow targets are 200,000 cfs in July and August. Grand Coulee drafts for this flow augmentation target, subject to draft limits.
- **Lower Granite Flow Targets** also vary depending on the forecast. When Lower Granite April 1, April-July runoff forecast is less than 16 MAF, then the April 3 through June 20 flow target is 85,000 cfs, and the June 21 through August 31 is 50,000 cfs. When the April 1 Lower Granite April-July forecast is greater than 20 MAF, the April 3 through June 20 target flow is 100,000 cfs. In June 21 through August 31, when the forecast is greater than 28 MAF, the flow target is 55,000 cfs. The spring flow targets are interpolated for forecasts between 16 and 20 MAF, and the summer flow targets are interpolated for forecasts between 16 and 28 MAF. However, these spring flow targets do not actually get modeled at Lower Granite because filling Dworshak by the end of June has a higher priority. Dworshak does draft to meet the summer flow objective, subject to draft limits.
- **John Day** is operated at 262.5 feet (127.8 ksfd) from April through September. From October through March, John Day operates to 265 feet (190.4 ksfd).
- **Bonneville** second powerhouse corner collector is modeled as “other spill” in HYDSIM, using the “other spill” data from PNCA OY19.
- **Spill at non-Federal projects** is summarized below from PNCA OY19 planning data. Wells dam spills the percentage shown below if Chief Joseph’s outflow is less than 140,000 cfs; otherwise Wells spills 10,200 cfs April 12 through August 26.

| PROJECTS:           | <u>Non-Federal Spill for Fish</u> (Percent of Total Outflow or cfs) |        |        |        |        |        |        |
|---------------------|---|--------|--------|--------|--------|--------|--------|
|                     | Apr1  | Apr2   | May    | Jun    | Jul    | Aug1   | Aug2   |
| Wells (%)           | 1.7   | 6.5    | 6.5    | 6.5    | 6.5    | 6.5    | 4.5    |
| Rocky Reach (%)     | 0.0   | 0.0    | 2.9    | 9.0    | 9.0    | 9.0    | 2.8    |
| Rock Island (%)     | 0.0   | 9.3    | 10.6   | 20.0   | 20.0   | 20.0   | 6.3    |
| Wanapum (cfs)       | 1,700   | 21,700 | 21,700 | 21,700 | 21,700 | 21,700 | 12,700 |
| Priest Rapids (cfs) | 1,800   | 28,800 | 28,000 | 28,800 | 28,800 | 28,800 | 15,800 |
| PROJECTS:           | Sep   | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    |
| Wanapum (cfs)       | 3,700   | 3,700  | 2,700  | 800    | 800    | 1,200  | 1,458  |
| Priest Rapids (cfs) | 2,800   | 2,800  | 2,300  | 200    | 200    | 1,100  | 1,461  |

**OPER STEP**

- **All AER Step criteria apply in the OPER Step unless specifically amended below.**
- **Loads** in the OPER Step are the 2020 and 2021 Coordinated System firm residual hydro loads from BPA’s LORA Study (Token S175-INV-20190228-081109) on February 28, 2019. These residual hydro loads are the total Coordinated System firm load less all the firm non-hydro resources. A variable secondary market limit based on an AURORA market analysis is also included in March through July periods of every year. The secondary market limit is calculated as necessary to force the HYDSIM ‘overgen’ spill to equal the spill due to lack of market estimated by AURORA, except in periods when Grand Coulee and/or Hungry Horse are able to store water and avoid spill. The Coordinated System independent hydro generation from BPA’s LORA Study (Token S175-INV-20190226-152056) is also used in this study to develop the residual hydro load. In this OPER study, the generation from the Tacoma and PacifiCorp projects is included in the HYDSIM Coordinated System total generation because Tacoma and PacifiCorp are included in the Coordinated System firm residual hydro loads from BPA’s LORA.
- **Availability Factors** are used in HYDSIM to simulate unit outages and units held for reserve requirements. Unit outages are based on the latest information for all plants provided by BPA’s Federal Hydro Projects Ops group. The availability factors are calculated using a combination of planned outages plus forced outages that are based on historical data and forecast equipment condition. The following tables show availability factors based on these outage assumptions for FY 2020 and FY 2021.

FY 2020:

|            | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>LIB</b> | 94% | 99% | 99% | 82% | 70% | 81% | 83% | 99% | 99% | 99% | 84% | 79% |
| <b>HGH</b> | 73% | 73% | 73% | 73% | 74% | 85% | 69% | 48% | 63% | 43% | 25% | 64% |
| <b>ALF</b> | 98% | 84% | 85% | 98% | 98% | 98% | 98% | 76% | 76% | 65% | 76% | 71% |
| <b>DWR</b> | 69% | 20% | 56% | 80% | 98% | 98% | 98% | 91% | 98% | 98% | 98% | 91% |
| <b>GCL</b> | 69% | 69% | 68% | 69% | 76% | 81% | 79% | 76% | 72% | 78% | 80% | 55% |
| <b>CHJ</b> | 75% | 94% | 96% | 97% | 95% | 88% | 90% | 95% | 98% | 98% | 95% | 88% |
| <b>LWG</b> | 77% | 85% | 88% | 95% | 98% | 98% | 98% | 98% | 98% | 85% | 82% | 86% |
| <b>LGS</b> | 81% | 80% | 71% | 80% | 80% | 91% | 96% | 96% | 96% | 83% | 80% | 85% |
| <b>LMN</b> | 64% | 77% | 71% | 92% | 97% | 97% | 97% | 97% | 97% | 83% | 82% | 82% |
| <b>IHR</b> | 76% | 81% | 85% | 90% | 91% | 76% | 76% | 76% | 76% | 57% | 70% | 69% |
| <b>MCN</b> | 88% | 90% | 96% | 97% | 97% | 96% | 96% | 96% | 92% | 96% | 96% | 91% |
| <b>JDA</b> | 84% | 93% | 90% | 91% | 93% | 93% | 90% | 90% | 94% | 89% | 92% | 86% |
| <b>TDA</b> | 82% | 86% | 85% | 83% | 82% | 80% | 76% | 80% | 67% | 80% | 79% | 72% |
| <b>BON</b> | 95% | 93% | 92% | 94% | 93% | 87% | 85% | 83% | 87% | 89% | 90% | 95% |

FY 2021:

|            | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>LIB</b> | 99% | 99% | 99% | 81% | 86% | 82% | 82% | 99% | 99% | 91% | 63% | 87% |
| <b>HGH</b> | 73% | 73% | 74% | 98% | 98% | 49% | 44% | 48% | 52% | 48% | 48% | 48% |
| <b>ALF</b> | 99% | 99% | 99% | 99% | 99% | 99% | 99% | 99% | 99% | 99% | 89% | 73% |
| <b>DWR</b> | 66% | 20% | 90% | 89% | 98% | 98% | 98% | 98% | 98% | 98% | 98% | 78% |
| <b>GCL</b> | 49% | 45% | 46% | 56% | 78% | 79% | 79% | 87% | 82% | 84% | 85% | 62% |
| <b>CHJ</b> | 93% | 97% | 97% | 97% | 95% | 87% | 95% | 97% | 97% | 98% | 96% | 90% |
| <b>LWG</b> | 82% | 82% | 95% | 89% | 95% | 96% | 97% | 97% | 97% | 88% | 75% | 81% |
| <b>LGS</b> | 85% | 85% | 86% | 97% | 96% | 96% | 96% | 96% | 96% | 83% | 70% | 85% |
| <b>LMN</b> | 81% | 90% | 85% | 98% | 96% | 96% | 96% | 96% | 96% | 69% | 81% | 82% |
| <b>IHR</b> | 67% | 66% | 78% | 66% | 75% | 78% | 77% | 78% | 90% | 71% | 80% | 92% |
| <b>MCN</b> | 84% | 89% | 90% | 96% | 96% | 95% | 94% | 95% | 94% | 88% | 85% | 84% |
| <b>JDA</b> | 87% | 93% | 86% | 90% | 88% | 92% | 86% | 91% | 93% | 90% | 87% | 83% |
| <b>TDA</b> | 76% | 76% | 82% | 84% | 81% | 73% | 80% | 85% | 86% | 87% | 90% | 93% |
| <b>BON</b> | 95% | 94% | 88% | 88% | 88% | 94% | 92% | 85% | 76% | 91% | 89% | 94% |

- The availability factors are also used to reflect reserve requirements because HYDSIM has no other mechanism to account for incremental reserves, which require the system to have units available to increase generation. After calculating availability factors based on unit outage information, the availability factors are further decreased to reflect units needed for meeting reserve requirements. The availability factors assume the federal hydro system will provide 82.8 percent of the estimated operating contingency reserves required. The availability factors reflect operating contingency reserve requirements at 3 percent of the total control area generation and 3 percent of the total loads. A balancing reserve requirement of 686 MW for October-May periods, and 720 MW for June-August, and 728 aMW for September periods in FY2020; 773 MW for October-March periods, 780 MW for April-August periods, and 795 MW for Sep in FY 2021 are also included in the availability factors. The installed wind forecast of 2767 MW for October -May periods and 2967 MW for June-September periods in FY2020; 3269 MW for October-August periods and 3473 MW for September period in FY2021 are also included in the availability factors. The availability factors also reflect the 1 percent of peak efficiency turbine operating requirements at the four lower Snake River projects and the four lower Columbia River projects in April-November. The following tables show availability factors after considering these reserve and turbine operating requirements in addition to the outage assumptions.

FY 2020:

|            | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>LIB</b> | 94% | 99% | 99% | 83% | 70% | 81% | 83% | 99% | 99% | 99% | 84% | 79% |
| <b>HGH</b> | 72% | 72% | 72% | 72% | 74% | 85% | 69% | 48% | 63% | 43% | 26% | 64% |
| <b>ALF</b> | 92% | 82% | 82% | 92% | 92% | 92% | 92% | 71% | 71% | 61% | 71% | 71% |
| <b>DWR</b> | 69% | 20% | 56% | 80% | 98% | 98% | 98% | 90% | 98% | 98% | 98% | 90% |
| <b>GCL</b> | 60% | 65% | 65% | 66% | 70% | 70% | 68% | 68% | 65% | 69% | 70% | 54% |
| <b>CHJ</b> | 75% | 82% | 82% | 82% | 88% | 88% | 86% | 86% | 82% | 87% | 88% | 68% |
| <b>LWG</b> | 56% | 62% | 63% | 70% | 72% | 72% | 79% | 79% | 79% | 69% | 67% | 63% |
| <b>LGS</b> | 60% | 59% | 51% | 59% | 59% | 68% | 78% | 79% | 78% | 69% | 66% | 63% |
| <b>LMN</b> | 58% | 62% | 56% | 75% | 80% | 80% | 87% | 87% | 87% | 75% | 74% | 67% |
| <b>IHR</b> | 63% | 67% | 70% | 75% | 75% | 71% | 71% | 71% | 71% | 53% | 66% | 56% |
| <b>MCN</b> | 63% | 65% | 69% | 70% | 70% | 69% | 75% | 75% | 72% | 75% | 75% | 66% |
| <b>JDA</b> | 78% | 86% | 83% | 85% | 86% | 86% | 82% | 82% | 86% | 81% | 84% | 80% |
| <b>TDA</b> | 63% | 65% | 64% | 62% | 62% | 62% | 54% | 57% | 46% | 57% | 56% | 54% |
| <b>BON</b> | 75% | 74% | 72% | 74% | 73% | 68% | 69% | 68% | 71% | 72% | 74% | 79% |

FY 2021:

|            | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>LIB</b> | 98% | 98% | 98% | 81% | 85% | 82% | 82% | 98% | 98% | 91% | 64% | 88% |
| <b>HGH</b> | 72% | 72% | 74% | 98% | 98% | 49% | 44% | 48% | 53% | 48% | 48% | 48% |
| <b>ALF</b> | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 92% | 71% |
| <b>DWR</b> | 66% | 20% | 90% | 89% | 98% | 98% | 98% | 98% | 98% | 98% | 98% | 78% |
| <b>GCL</b> | 48% | 45% | 46% | 56% | 70% | 70% | 68% | 75% | 71% | 72% | 73% | 59% |
| <b>CHJ</b> | 62% | 58% | 59% | 73% | 89% | 87% | 86% | 94% | 90% | 91% | 93% | 74% |
| <b>LWG</b> | 60% | 67% | 70% | 65% | 69% | 70% | 78% | 78% | 78% | 72% | 61% | 59% |
| <b>LGS</b> | 63% | 70% | 71% | 73% | 71% | 72% | 79% | 79% | 79% | 68% | 58% | 63% |
| <b>LMN</b> | 73% | 74% | 76% | 81% | 78% | 79% | 87% | 87% | 87% | 62% | 73% | 66% |
| <b>IHR</b> | 63% | 62% | 73% | 53% | 61% | 63% | 73% | 73% | 85% | 66% | 75% | 77% |
| <b>MCN</b> | 61% | 69% | 64% | 69% | 69% | 68% | 74% | 75% | 74% | 69% | 67% | 60% |
| <b>JDA</b> | 81% | 88% | 79% | 83% | 81% | 85% | 78% | 83% | 85% | 81% | 79% | 77% |
| <b>TDA</b> | 62% | 64% | 68% | 64% | 60% | 54% | 56% | 61% | 61% | 62% | 65% | 71% |
| <b>BON</b> | 75% | 74% | 68% | 69% | 68% | 73% | 75% | 70% | 62% | 74% | 73% | 77% |

- **Initial Contents** for the major federal projects are based on the 70-year average of September 30 storage ending content from the 08\_RateCase10\_final study.
- **Flood Control Rule Curves** for Grand Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan and are also adjusted to shift some Dworshak flood control space to Grand Coulee when possible while still meeting Dworshak's local flood control requirements and following Corps procedures.
- **Non-federal projects** are run to the resulting contents from the AER Step. This allows the federal projects to operate differently without causing the non-federal projects to adjust operations to meet the system load.
- **Bonneville Chum Flow Objectives** are determined each period based on 11.5 or 11.3 feet tailwater elevation requirements below Bonneville November through March and 16.5 feet tailwater in April and the historical Willamette streamflow data. The January-March minimum Chum flows are re-calculated based on the regulated outflow at Bonneville in December. Grand Coulee operates to meet the chum flow objectives November through March subject to the draft limits described under Grand Coulee.
- **April 10 URC** objectives are included in the study. The BiOp objective is for the federal reservoirs to be at their April 10 URC elevations each year, as full as possible in preparation for providing flows to meet the spring flow objectives, although minimum flow requirements and forecast errors can cause projects to miss this refill objective. The objective is for Grand Coulee to operate with an 85 percent chance of reaching the April 10 elevation and for Libby and Hungry Horse to operate with a 75 percent chance. The April 10 objectives are modeled as April 15 objectives in HYDSIM.
- **Lower Granite flow targets** in summer have been removed from the OPER Step as well because Dworshak now runs to target elevations by the end of August to better reflect actual operations.

#### **Project Specific Data:**

- **Mica, Duncan, and Arrow** are fixed to the 80-year DOP20 study for 2020 and 2021 rate case studies with the following additions: 1) One MAF of flow augmentation is stored at Mica in January and is released in February and March in years when the final February and March forecasts of April through August volume at The Dalles is less than 75 MAF, otherwise it is released all in July unless the regulated outflow at McNary is below 250,000 cfs in May-June then releases start in May with the limit of 8,000 cfs in May-Jun periods. The 1 MAF storage in January is limited by a minimum flow of 30,000 cfs for whitefish if the January 1 forecast of April through August volume at The Dalles is less than 75 MAF; otherwise the minimum flow is 20,000 cfs. Storage in February or March is not allowed if the outflows decrease more than 19,000 cfs from the January outflow. 2) The trout spawning operation is included at Arrow where April flows are at least 15,000 cfs and May and June flows are equal to or greater than the preceding month whenever possible. No more than a 5,000 cfs decrease is allowed in June from May outflow and 3) Mica, Arrow and Duncan projects are on DOP20 contents by July 31. The outflow at Arrow in July cannot exceed 80,000 cfs.
- **Non-Treaty Storage Agreement (NTSA):** A total of 3 MAF NTSA storage and release is included in the study. Modeling the NTSA operations required plant data updates at Mica and Arrow to increase their maximum storage contents and their upper rule curves. The study includes the NTSA dry-year operations and spring-summer operations. The NTSA also includes operations driven by price, but this operation is not included in this study due to the complexities of incorporating price-based operating decisions.

- **For Dry Year NTSA operation**
  - Store ½ MAF into Mica (or Arrow) in November-June if the April Final April-August volume forecast at The Dalles is 91.4 MAF or higher.
  - Release ½ MAF from Mica (or Arrow) in May-June if the April Final April-August volume forecast at The Dalles is less than 72.5 MAF (forecast trigger for Dry Years).
  - Water that is stored in November-June should not violate the minimum flow requirements at Priest Rapids, Bonneville, and McNary and the Arrow trout/whitefish operations. Water that is released in May or June should not violate the Arrow trout spawning operation.
- **For Spring-Summer NTSA operation**
  - Store up to 2½ MAF at Mica (or Arrow) in April 16 – June 30 if meeting Arrow trout operation and exceeding 300,000 cfs outflow at McNary and minimum flow requirement at Priest. Do not store in May-June for years that Arrow’s outflow from the DOP study exceeds 80,000 cfs in August. The Canadians would not likely agree to the spring-summer provision when flows are forecasted to be that high.
  - Release in July-August the amount that was stored in April 16 – June 30 at Mica (or Arrow). If the release in July would result in McNary exceeding its flow target, then the release occurs in August without violating the 80,000 cfs maximum flow.
- **Priest Rapids** flow augmentation targets for Steelhead are modeled as 120,000 cfs in April 10-15, 90,000 cfs in April 16-30 and 135,000 cfs in May. In dry years, the May flow targets will be reduced to 100,000 cfs if Grand Coulee inflow is below 90,000 cfs and will be reduced to 115,000 cfs if Grand Coulee inflow is between 90,000 cfs and 120,000 cfs.
- **Brownlee** drafts to 2062.0 feet (391.5 ksf) in July, 2059.0 feet (373.5 ksf) on August 15, 2055.0 feet (349.4 ksf) on August 31, 2048.0 feet (309.7 ksf) in September, and 2050.0 feet (320.4 ksf) in October. In November, Brownlee operates to meet the flow target of 9,000 cfs at Hells Canyon for Idaho Power Company Fall Chinook operation, and Hells Canyon only exceeds the 9,000 cfs flow when Brownlee drafts more due to the flood control URC. In December, Brownlee targets 2065.0 feet (409.5 ksf) but will draft deeper in order to meet the minimum flow of 9,000 cfs at Hells Canyon. In January, Brownlee targets 2065.0 feet (409.5 ksf) but can fill higher to avoid exceeding the maximum flow limit. In February-May, Brownlee remains full at 2077.0 ft (491.7 ksf) except when the URC or minimum flow at Hells Canyon of 9,000 cfs requires deeper drafts. In June, Brownlee targets full except when draft is needed to maintain a minimum flow of 7,000 cfs at Hells Canyon. Brownlee has a maximum flow limit of 35,000 cfs in all periods except 30,000 cfs in January.
- **Dworshak** has a maximum discharge of 17,000 cfs April-December and 14,000 cfs January-March to reflect typical actual operations and avoid exceeding 110 percent TDG. January through June outflows are reshaped to reduce forced spill. July and August outflows are smoothed to reflect typical actual operations by using 11,000 cfs minimum in July and August 1-15, and a maximum 25 percent reduction from the first half of August to the second half of August. Dworshak has a maximum elevation of 1590 feet (922.8 ksf) in July, and a target elevation of 1519 feet (389.4 ksf) in September.



- **Libby** has a September minimum flow of 6,000 cfs. In the fall, Libby minimizes October draft and maximizes December draft by targeting outflow of 4,000 cfs in October-November, and limiting outflow to 20,000 cfs maximum October-December. Libby can release above 4,000 cfs in October-November if the outflow in December exceeds 20,000 cfs. Libby cannot fill above 2435 ft (1977.1 ksf) in November and 2454 ft (2394.9 ksf) in June. January through April outflows are reshaped to reduce forced spill. Libby's outflow in May is based on a VarQ allowable refill calculation as used in actual operations; therefore, Libby might fill above flood control some years in May to achieve calculated VarQ flow. Libby's May through September operation includes the sturgeon pulse, bull trout minimum required flows, and summer flow augmentation. June and July outflows are reshaped to reduce forced spill in July. Libby is allowed to fill above flood control to avoid spilling in January through March to reflect the actual operation.
- **Hungry Horse** has a maximum elevation of 3545 feet (1330.2 ksf) in April and 3558 feet (1480.1 ksf) in June. Outflows from the second half of April and May are reshaped to prevent June outflow from exceeding 9000 cfs. Columbia Falls minimum flow requirements in July-September include the additional irrigation flow of 493 cfs in dry years. Hungry Horse minimum is set to 50% of the Columbia Falls minimum flow during March-June if Hungry Horse April-May-September volume forecast is less than 1450 KAF.
- **Kerr** targets 2891 feet (488.6 ksf) in October, 2890.0 feet (426.3 ksf) in November, 2888 feet (302.8 ksf) in December, 2884.3 feet (77.8 ksf) in January, 2883.6 feet (35.8 ksf) in February, 2884.0 feet (59.7 ksf) in March, 2884.9 feet (113.9 ksf) on April 15, 2886.6 feet (217.1 ksf) on April 30, 2890.0 feet (426.3 ksf) in May, full at 2893.0 feet (614.7 ksf) June-August, and 2892.5 feet (583.1 ksf) in September.
- **Grand Coulee** operates at 1284 feet (2453.5 ksf) in September and between 1283 feet (2413.9 ksf) and 1288 feet (2615.5 ksf) in October. The draft limits for Chum flow in November and December are 1275 feet (2102.4 ksf) and 1270 feet (1915.1 ksf), respectively. Grand Coulee cannot fill above 1288 feet (2615.5 ksf) in any period except July-August in some years that it can fill to 1290 feet (2697.1 ksf) in order to reduce forced spill. Grand Coulee drafts to support the Chum flow target January through March subject to the draft limits of about 10 feet below the computed variable draft limit in non-drum gate maintenance years. The Bureau performs maintenance during the spring on the spillway drum gates at least one of every three years, at least two of every five years, and at least three of every seven years. This drum gate maintenance requires a maximum Lake Roosevelt elevation of 1267.0 feet (1805.3 ksf) at the end of February and 1255 feet (1380.2 ksf) from March through April 30. Years when the April flood control elevation at Grand Coulee based on February water supply forecast is less than 1255 feet (1380.2 ksf) are automatic drum gate maintenance years. Grand Coulee can draft further if needed to support the Vernita Bar flow requirement at Priest Rapids. The deepest draft limits at Grand Coulee for Vernita Bar minimum flow requirement without violating the draft limits of 1270 feet (1915.1 ksf) in December, 1260 feet (1553.3 ksf) in January, 1250 feet (1209.0 ksf) in February, and 1240 feet (884.4 ksf) March-May. Grand Coulee can only draft 10 feet below the flood control to support the Steelhead minimum flows in April-May. In all periods, Grand Coulee cannot draft below 1228 feet (525.6 ksf) unless it is on flood control operation. In June, Grand Coulee operates between 1285 feet (2493.0 ksf) and 1288 feet (2615.5 ksf) unless it is on flood control. Grand Coulee's April-December operation includes additional draft as allowed by the Lake Roosevelt Incremental Storage Releases Program (LRISRP). After meeting all modeling requirements, Grand Coulee's January through March operation is re-evaluated to put more generation in January and February or evenly distribute the secondary energy when possible without violating the one foot per day draft rate limit and other constraints in the study.
- **Columbia Basin Irrigation Project Pumping (Banks Lake)** is captured through the PNCA data submittal estimates of pumping, which are based on the average of the past five years' actual pumping.

- **Juvenile Fish Bypass Spill** for the federal projects is summarized in the following table.

| <b>Spill Criteria for BP20 FY2020-21 Final Proposal</b> |                                   |                 |                                     |   |   |
|---|-----------------------------------|-----------------|-------------------------------------|---|---|
| <b>Projects</b>   | <b>Spill</b>                      | <b>Min Turb</b> | <b>Days</b>                         | <b>Hour Ending</b>                          | <b>Notes</b>  |
| <b>LWG</b>  | 115%/120% gas cap;<br>18 kcfs     | 11.5 kcfs       | Apr 3 - Jun 20; Jun<br>21 - Aug 31  | All hours                                   | All years   |
| <b>LGS</b>  | 115%/120% gas cap;<br>30% of flow | 11.5 kcfs       | Apr 3 - Jun 20; Jun<br>21 - Aug 31  | All hours                                   | All years   |
| <b>LMN</b>  | 115%/120% gas cap;<br>17 kcfs     | 11.5 kcfs       | Apr 3 - Jun 20; Jun<br>21 - Aug 31  | All hours                                   | All years   |
| <b>IHR</b>  | 115%/120% gas cap;<br>30% of flow | 9.5 kcfs        | Apr 3 - Jun 20; Jun<br>21 - Aug 31  | All hours                                   | All years; Night 1800-0500 (11 hrs),<br>day 0500-1800 (13 hrs)  |
| <b>MCN</b>  | 115%/120% gas cap;<br>57% of flow |                 | Apr 10 - Jun 15;<br>Jun 16 - Aug 31 | All hours                                   | All years   |
| <b>JDA **</b>   | 115%/120% gas cap;<br>35% of flow | 50 kcfs         | Apr 10 - Jun 15;<br>Jun 16 - Aug 31 | All hours                                   | All years<br><b>** Small ladder attraction spill (Sep-<br/>Nov)</b>   |
| <b>TDA</b>  | 115%/120% gas cap;<br>40% of flow | 50 kcfs         | Apr 10 - Jun 15;<br>Jun 16 - Aug 31 | All hours                                   | All years   |
| <b>BON **</b>   | 115%/120% gas cap;<br>95 kcfs     | 30 kcfs         | Apr 10 - Jun 15;<br>Jun 16 - Aug 31 | All hours;<br>day/night spill<br>hours vary | Jun1-30 day hrs are 0430-2130; Jul1-<br>31 day hrs are 0430-2200; Aug1-15<br>day hrs are 0500-2145; Aug16-31<br>day hrs are 0500-2030.<br><b>**Small ladder attraction spill (Sep-<br/>Apr)</b> |

LWG = Lower Granite; LGS = Little Goose; LMN = Lower Monumental; IHR = Ice Harbor; MCN = McNary;  
JDA = John Day; TDA = The Dalles; BON = Bonneville

- **Overgeneration Spill Priorities and TDG Caps** are summarized in the following table. One kcfs equals one thousand cfs. Spill up to the TDG levels is modeled in the order listed below to avoid generation levels that exceed the secondary market limit. This is called ‘overgen spill’ in HYDSIM. A variable secondary market limit is calculated in HYDSIM as needed to force the ‘overgen’ spill in each period to equal the estimated energy spilled due to lack of market from the AURORA model. The following are rough approximations of the typical amounts of spill that cause TDG to reach the specified percentage levels. (In actual operations, the spill at a certain gas level can vary significantly and operations are adjusted in real time to manage to the appropriate gas level.)

Spring/Summer: TDG spill production estimates in kcfs

|        | TDG  | APR | MAY | JUN | JUL | AUG |
|--------|------|-----|-----|-----|-----|-----|
| LWG    | 120% | 55  | 50  | 50  | 45  | 35  |
| LGS    | 120% | 55  | 55  | 55  | 55  | 55  |
| LMN    | 120% | 55  | 50  | 55  | 55  | 55  |
| IHR    | 120% | 95  | 90  | 90  | 95  | 100 |
| MCN    | 120% | 190 | 185 | 170 | 175 | 180 |
| JDA    | 120% | 150 | 145 | 145 | 150 | 155 |
| TDA    | 120% | 145 | 145 | 140 | 135 | 115 |
| BON    | 120% | 125 | 120 | 125 | 135 | 155 |
| CHJ    | 120% | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 120% | 67  | 69  | 69  | 69  | 66  |
| GCL_RO | 120% | 20  | 13  | 5   | 6   | 14  |
| LWG    | 122% | 60  | 60  | 60  | 55  | 50  |
| LGS    | 122% | 65  | 65  | 65  | 65  | 65  |
| LMN    | 122% | 70  | 65  | 65  | 70  | 75  |
| IHR    | 122% | 105 | 100 | 100 | 110 | 115 |
| MCN    | 122% | 220 | 220 | 215 | 215 | 220 |
| JDA    | 122% | 170 | 170 | 170 | 170 | 175 |
| TDA    | 122% | 175 | 175 | 170 | 160 | 145 |
| BON    | 122% | 160 | 160 | 165 | 170 | 190 |
| CHJ    | 122% | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 122% | 77  | 79  | 79  | 79  | 76  |
| GCL_RO | 122% | 25  | 18  | 10  | 10  | 19  |
| LWG    | 125% | 75  | 75  | 75  | 75  | 75  |
| LGS    | 125% | 80  | 80  | 80  | 80  | 80  |
| LMN    | 125% | 95  | 90  | 90  | 100 | 100 |
| IHR    | 125% | 125 | 120 | 120 | 130 | 130 |
| MCN    | 125% | 270 | 270 | 265 | 270 | 270 |
| JDA    | 125% | 200 | 200 | 200 | 205 | 210 |
| TDA    | 125% | 245 | 245 | 240 | 240 | 230 |
| BON    | 125% | 220 | 220 | 225 | 235 | 250 |
| CHJ    | 125% | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 125% | 90  | 90  | 95  | 95  | 90  |
| GCL_RO | 125% | 32  | 27  | 20  | 20  | 28  |
| LWG    | 127% | 85  | 80  | 85  | 85  | 85  |
| LGS    | 127% | 95  | 95  | 95  | 95  | 95  |
| LMN    | 127% | 115 | 110 | 110 | 120 | 120 |
| IHR    | 127% | 135 | 130 | 130 | 140 | 145 |
| MCN    | 127% | 305 | 305 | 305 | 305 | 310 |
| JDA    | 127% | 220 | 220 | 220 | 220 | 230 |
| TDA    | 127% | 295 | 290 | 290 | 295 | 305 |
| BON    | 127% | 265 | 265 | 270 | 275 | 295 |
| CHJ    | 127% | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 127% | 100 | 100 | 100 | 100 | 95  |
| GCL_RO | 127% | 38  | 33  | 27  | 27  | 33  |
| LWG    | 130% | 100 | 95  | 95  | 100 | 100 |
| LGS    | 130% | 125 | 125 | 125 | 125 | 125 |

Spring/Summer: TDG spill production estimates in kcfs

|        |      |     |     |     |     |     |
|--------|------|-----|-----|-----|-----|-----|
| LMN    | 130% | 150 | 145 | 145 | 150 | 155 |
| IHR    | 130% | 155 | 150 | 150 | 160 | 160 |
| MCN    | 130% | 350 | 350 | 350 | 350 | 350 |
| JDA    | 130% | 250 | 245 | 245 | 250 | 255 |
| TDA    | 130% | 350 | 350 | 350 | 350 | 350 |
| BON    | 130% | 345 | 340 | 345 | 350 | 350 |
| CHJ    | 130% | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 130% | 110 | 110 | 110 | 115 | 105 |
| GCL_RO | 130% | 46  | 43  | 37  | 38  | 42  |
| LWG    | 135% | 125 | 125 | 125 | 130 | 130 |
| LGS    | 135% | 195 | 195 | 195 | 195 | 195 |
| LMN    | 135% | 195 | 195 | 195 | 195 | 195 |
| IHR    | 135% | 190 | 185 | 185 | 195 | 195 |
| MCN    | 135% | 350 | 350 | 350 | 350 | 350 |
| JDA    | 135% | 290 | 290 | 290 | 295 | 300 |
| TDA    | 135% | 350 | 350 | 350 | 350 | 350 |
| BON    | 135% | 350 | 350 | 350 | 350 | 350 |
| CHJ    | 135% | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 135% | 125 | 130 | 130 | 130 | 125 |
| GCL_RO | 135% | 59  | 58  | 55  | 55  | 57  |

GCL\_RO: Spill through outlet tubes is assumed to occur April through June when the reservoir is more likely below the spillway crest.

GCL\_DG: Spill through drumgates is assumed to occur July through August.

Fall/Winter: TDG spill production estimates in kcfs

|        | TDG  | SEP | OCT | NOV | DEC | JAN | FEB | MAR |
|--------|------|-----|-----|-----|-----|-----|-----|-----|
| BON    | 110% | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| TDA    | 110% | 40  | 40  | 55  | 60  | 65  | 65  | 60  |
| JDA    | 110% | 50  | 55  | 55  | 50  | 50  | 50  | 35  |
| MCN    | 110% | 5   | 5   | 15  | 15  | 15  | 15  | 15  |
| IHR    | 110% | 15  | 10  | 15  | 15  | 15  | 15  | 15  |
| LMN    | 110% | 10  | 10  | 10  | 10  | 15  | 15  | 15  |
| LGS    | 110% | 20  | 20  | 20  | 20  | 20  | 20  | 25  |
| DWR    | 110% | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| LWG    | 110% | 15  | 15  | 15  | 20  | 20  | 20  | 20  |
| CHJ    | 110% | 21  | 21  | 21  | 21  | 21  | 21  | 21  |
| GCL_DG | 110% | 18  | 18  | 19  | 19  | 19  | 19  | 19  |
| BON    | 115% | 50  | 50  | 50  | 45  | 45  | 45  | 40  |
| TDA    | 115% | 70  | 70  | 85  | 95  | 105 | 105 | 100 |
| JDA    | 115% | 90  | 90  | 90  | 90  | 85  | 85  | 80  |
| MCN    | 115% | 85  | 85  | 80  | 80  | 80  | 80  | 80  |
| IHR    | 115% | 25  | 25  | 25  | 25  | 25  | 25  | 25  |
| LMN    | 115% | 20  | 15  | 15  | 20  | 20  | 20  | 25  |
| LGS    | 115% | 30  | 30  | 30  | 30  | 30  | 30  | 35  |
| LWG    | 115% | 30  | 30  | 30  | 30  | 30  | 30  | 35  |
| DWR    | 110% | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| CHJ    | 115% | 48  | 48  | 48  | 48  | 48  | 48  | 48  |
| GCL_DG | 115% | 33  | 5   | 7   | 30  | 29  | 30  | 29  |
| BON    | 120% | 140 | 145 | 135 | 130 | 125 | 125 | 115 |
| TDA    | 120% | 120 | 120 | 135 | 145 | 150 | 150 | 150 |
| JDA    | 120% | 135 | 135 | 135 | 135 | 135 | 130 | 130 |
| MCN    | 120% | 180 | 180 | 175 | 175 | 175 | 175 | 170 |
| IHR    | 120% | 95  | 95  | 95  | 95  | 90  | 90  | 70  |
| LMN    | 120% | 25  | 25  | 25  | 30  | 30  | 30  | 30  |
| LGS    | 120% | 50  | 50  | 50  | 50  | 50  | 50  | 50  |
| LWG    | 120% | 45  | 45  | 45  | 45  | 45  | 50  | 50  |
| DWR    | 110% | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| CHJ    | 120% | 280 | 280 | 280 | 280 | 280 | 280 | 280 |
| GCL_DG | 120% | 60  | 60  | 62  | 64  | 65  | 64  | 65  |

DWR: only spills to 110% and is typically managed as a percentage of outflow.

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**9. FEDERAL LOADS AND RESOURCES FOR FY 2020 AND FY 2021.....133**

**Table 9.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                   | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                          | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Firm Obligations</b>             |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| <b>1 Load Following</b>             | 2,864        | 3,343        | 3,845        | 3,796        | 3,547        | 3,157        | 3,184        | 3,184        | 3,177        | 3,387        | 3,664        | 3,491        | 3,471        | 3,102        | 3,379        |
| 2 Preference Customers              | 2,646        | 3,192        | 3,668        | 3,624        | 3,379        | 2,960        | 2,824        | 2,824        | 2,743        | 2,926        | 3,140        | 3,068        | 3,041        | 2,731        | 3,074        |
| 3 Federal Agencies                  | 109          | 135          | 163          | 162          | 152          | 132          | 115          | 115          | 107          | 108          | 121          | 118          | 117          | 108          | 127          |
| 4 USBR                              | 108          | 15           | 14           | 10           | 16           | 65           | 244          | 244          | 327          | 353          | 403          | 305          | 313          | 263          | 178          |
| 5 Federal Diversity                 | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| <b>6 Tier 1 Block</b>               | 529          | 871          | 870          | 957          | 869          | 853          | 419          | 419          | 149          | 21           | 340          | 385          | 383          | 633          | 574          |
| 7 Tier 1 Block                      | 529          | 871          | 870          | 957          | 869          | 853          | 419          | 419          | 149          | 21           | 340          | 385          | 383          | 633          | 574          |
| <b>8 Slice</b>                      | 2,545        | 3,174        | 3,299        | 3,003        | 2,775        | 2,774        | 2,562        | 2,456        | 2,782        | 3,307        | 2,817        | 2,853        | 2,648        | 2,578        | 2,859        |
| 9 Slice Block                       | 1,159        | 1,356        | 1,559        | 1,553        | 1,373        | 1,312        | 1,216        | 1,216        | 1,179        | 1,155        | 1,210        | 1,182        | 1,182        | 1,126        | 1,282        |
| 10 Slice Output from T1 System      | 1,386        | 1,818        | 1,740        | 1,451        | 1,401        | 1,463        | 1,346        | 1,239        | 1,603        | 2,152        | 1,607        | 1,672        | 1,467        | 1,452        | 1,577        |
| <b>11 Direct Service Industries</b> | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| 12 Direct Service Industry          | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| <b>13 Contract Deliveries</b>       | 928          | 932          | 930          | 826          | 820          | 816          | 793          | 793          | 794          | 793          | 841          | 895          | 952          | 818          | 852          |
| 14 Exports                          | 577          | 576          | 576          | 536          | 531          | 531          | 506          | 506          | 506          | 506          | 552          | 607          | 663          | 531          | 547          |
| 15 Intra-Regional Transfers (Ou     | 139          | 144          | 142          | 78           | 77           | 73           | 75           | 75           | 76           | 75           | 77           | 75           | 76           | 75           | 92           |
| 16 Firm Surplus Sale                | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          | 212          |
| <b>17 Total Firm Obligations</b>    | <b>6,877</b> | <b>8,333</b> | <b>8,957</b> | <b>8,594</b> | <b>8,023</b> | <b>7,612</b> | <b>6,969</b> | <b>6,863</b> | <b>6,915</b> | <b>7,520</b> | <b>7,674</b> | <b>7,636</b> | <b>7,466</b> | <b>7,144</b> | <b>7,677</b> |



**Table 9.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                | B            | C            | D            | E             | F            | G            | H            | I             | J            | K             | L            | M            | N            | O            | P            |
|----------------------------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                       | Oct          | Nov          | Dec          | Jan           | Feb          | Mar          | Apr1         | Apr16         | May          | Jun           | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Net Resources</b>             |              |              |              |               |              |              |              |               |              |               |              |              |              |              |              |
| <b>18 Hydro Resources</b>        | 5,607        | 7,462        | 7,127        | 5,802         | 6,177        | 5,868        | 4,780        | 4,233         | 6,610        | 8,934         | 7,021        | 6,793        | 6,036        | 6,086        | 6,466        |
| 19 Regulated Hydro - Net         | 5,298        | 7,203        | 6,952        | 5,685         | 6,046        | 5,634        | 4,342        | 3,787         | 5,888        | 8,223         | 6,612        | 6,417        | 5,661        | 5,766        | 6,115        |
| 20 Independent Hydro - Net       | 307          | 257          | 172          | 113           | 128          | 230          | 435          | 442           | 719          | 708           | 407          | 373          | 373          | 318          | 348          |
| 21 Small Hydro - Net             | 3            | 3            | 3            | 3             | 3            | 3            | 3            | 3             | 3            | 3             | 3            | 3            | 3            | 3            | 3            |
| <b>22 Other Resources</b>        | 1,160        | 1,180        | 1,164        | 1,142         | 1,159        | 1,165        | 1,204        | 1,190         | 1,195        | 1,194         | 1,193        | 1,156        | 1,175        | 1,171        | 1,174        |
| 23 Cogeneration Resources        | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| 24 Combustion Turbines           | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| 25 Large Thermal Resources       | 1,116        | 1,116        | 1,116        | 1,116         | 1,116        | 1,116        | 1,116        | 1,116         | 1,116        | 1,116         | 1,116        | 1,116        | 1,116        | 1,116        | 1,116        |
| 26 Renewable Resources           | 44           | 64           | 48           | 26            | 43           | 49           | 88           | 74            | 79           | 78            | 77           | 40           | 59           | 55           | 58           |
| 27 Small Thermal & Misc.         | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| <b>28 Contract Purchases</b>     | 284          | 289          | 282          | 282           | 281          | 281          | 262          | 260           | 259          | 279           | 266          | 267          | 252          | 262          | 274          |
| 29 Imports                       | 116          | 115          | 114          | 115           | 115          | 115          | 65           | 65            | 64           | 65            | 65           | 65           | 65           | 65           | 90           |
| 30 Intra-Regional Transfers (In) | 5            | 4            | 3            | 3             | 2            | 5            | 34           | 34            | 32           | 35            | 33           | 33           | 31           | 32           | 18           |
| 31 Non-Federal CER               | 137          | 136          | 131          | 137           | 136          | 133          | 137          | 137           | 132          | 137           | 137          | 137          | 128          | 137          | 135          |
| 32 Slice Transmission Loss Retu  | 26           | 35           | 33           | 28            | 27           | 28           | 26           | 24            | 31           | 41            | 31           | 32           | 28           | 28           | 30           |
| 33 Augmentation Purchases        | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| <b>34 Reserves &amp; Losses</b>  | -211         | -266         | -256         | -216          | -227         | -218         | -187         | -170          | -243         | -312          | -254         | -246         | -224         | -225         | -237         |
| 35 Contingency Reserves (Spinr   | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| 36 Contingency Reserves (Non-    | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| 37 Load Following Reserves       | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| 38 Generation Imbalance Reserv   | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0             | 0            | 0            | 0            | 0            | 0            |
| 39 Transmission Losses           | -211         | -266         | -256         | -216          | -227         | -218         | -187         | -170          | -243         | -312          | -254         | -246         | -224         | -225         | -237         |
| <b>40 Total Net Resources</b>    | <b>6,841</b> | <b>8,665</b> | <b>8,318</b> | <b>7,010</b>  | <b>7,389</b> | <b>7,096</b> | <b>6,059</b> | <b>5,513</b>  | <b>7,821</b> | <b>10,095</b> | <b>8,225</b> | <b>7,969</b> | <b>7,240</b> | <b>7,294</b> | <b>7,677</b> |
| <b>41 Total Surplus/Deficit</b>  | <b>-36</b>   | <b>332</b>   | <b>-639</b>  | <b>-1,584</b> | <b>-634</b>  | <b>-517</b>  | <b>-910</b>  | <b>-1,350</b> | <b>907</b>   | <b>2,575</b>  | <b>551</b>   | <b>334</b>   | <b>-225</b>  | <b>151</b>   | <b>0</b>     |

**Table 9.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                   | B            | C            | D            | E            | F            | G            | H            | I            | J            | K            | L            | M            | N            | O            | P            |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                          | Oct          | Nov          | Dec          | Jan          | Feb          | Mar          | Apr1         | Apr16        | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Firm Obligations</b>             |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| <b>1 Load Following</b>             | 2,885        | 3,359        | 3,858        | 3,820        | 3,610        | 3,161        | 3,200        | 3,200        | 3,194        | 3,409        | 3,681        | 3,481        | 3,509        | 3,111        | 3,398        |
| 2 Preference Customers              | 2,663        | 3,203        | 3,675        | 3,641        | 3,432        | 2,958        | 2,832        | 2,832        | 2,749        | 2,937        | 3,147        | 3,039        | 3,076        | 2,728        | 3,084        |
| 3 Federal Agencies                  | 114          | 140          | 168          | 168          | 161          | 138          | 124          | 124          | 118          | 119          | 132          | 128          | 129          | 119          | 136          |
| 4 USBR                              | 108          | 15           | 14           | 10           | 16           | 65           | 244          | 244          | 327          | 353          | 403          | 315          | 304          | 263          | 178          |
| 5 Federal Diversity                 | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| <b>6 Tier 1 Block</b>               | 526          | 865          | 865          | 950          | 894          | 848          | 417          | 417          | 148          | 21           | 338          | 380          | 383          | 629          | 572          |
| 7 Tier 1 Block                      | 526          | 865          | 865          | 950          | 894          | 848          | 417          | 417          | 148          | 21           | 338          | 380          | 383          | 629          | 572          |
| <b>8 Slice</b>                      | 2,581        | 3,212        | 3,342        | 3,044        | 2,863        | 2,813        | 2,494        | 2,344        | 2,821        | 3,271        | 2,850        | 2,886        | 2,676        | 2,609        | 2,884        |
| 9 Slice Block                       | 1,191        | 1,392        | 1,598        | 1,591        | 1,459        | 1,346        | 1,250        | 1,250        | 1,211        | 1,187        | 1,243        | 1,214        | 1,214        | 1,158        | 1,320        |
| 10 Slice Output from T1 System      | 1,389        | 1,820        | 1,744        | 1,453        | 1,405        | 1,467        | 1,244        | 1,094        | 1,610        | 2,084        | 1,607        | 1,672        | 1,463        | 1,451        | 1,564        |
| <b>11 Direct Service Industries</b> | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| 12 Direct Service Industry          | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           | 12           |
| <b>13 Contract Deliveries</b>       | 759          | 760          | 759          | 622          | 622          | 618          | 618          | 618          | 618          | 618          | 639          | 694          | 750          | 618          | 665          |
| 14 Exports                          | 531          | 531          | 531          | 454          | 454          | 454          | 454          | 454          | 454          | 454          | 476          | 531          | 587          | 454          | 484          |
| 15 Intra-Regional Transfers (Ou     | 74           | 75           | 74           | 13           | 13           | 9            | 9            | 9            | 9            | 9            | 9            | 9            | 9            | 9            | 26           |
| 16 Firm Surplus Sale                | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          | 154          |
| <b>17 Total Firm Obligations</b>    | <b>6,763</b> | <b>8,209</b> | <b>8,836</b> | <b>8,448</b> | <b>8,001</b> | <b>7,451</b> | <b>6,741</b> | <b>6,591</b> | <b>6,794</b> | <b>7,331</b> | <b>7,521</b> | <b>7,453</b> | <b>7,330</b> | <b>6,979</b> | <b>7,531</b> |

**Table 9.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
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| A                                | B            | C            | D            | E             | F            | G            | H            | I             | J            | K            | L            | M            | N            | O            | P            |
|----------------------------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Energy-aMW                       | Oct          | Nov          | Dec          | Jan           | Feb          | Mar          | Apr1         | Apr16         | May          | Jun          | Jul          | Aug1         | Aug16        | Sep          | Avg          |
| <b>Net Resources</b>             |              |              |              |               |              |              |              |               |              |              |              |              |              |              |              |
| <b>18 Hydro Resources</b>        | 5,607        | 7,462        | 7,128        | 5,802         | 6,177        | 5,868        | 4,780        | 4,233         | 6,617        | 8,934        | 7,025        | 6,822        | 6,065        | 6,086        | 6,470        |
| 19 Regulated Hydro - Net         | 5,298        | 7,203        | 6,952        | 5,685         | 6,046        | 5,634        | 4,342        | 3,787         | 5,895        | 8,223        | 6,616        | 6,446        | 5,689        | 5,766        | 6,119        |
| 20 Independent Hydro - Net       | 307          | 257          | 172          | 113           | 128          | 230          | 435          | 442           | 719          | 708          | 407          | 373          | 373          | 318          | 348          |
| 21 Small Hydro - Net             | 3            | 3            | 3            | 3             | 3            | 3            | 3            | 3             | 3            | 3            | 3            | 3            | 3            | 3            | 3            |
| <b>22 Other Resources</b>        | 1,157        | 1,175        | 1,161        | 1,140         | 1,156        | 1,162        | 1,198        | 1,185         | 434          | 482          | 1,187        | 1,153        | 1,171        | 1,167        | 1,048        |
| 23 Cogeneration Resources        | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| 24 Combustion Turbines           | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| 25 Large Thermal Resources       | 1,116        | 1,116        | 1,116        | 1,116         | 1,116        | 1,116        | 1,116        | 1,116         | 360          | 409          | 1,116        | 1,116        | 1,116        | 1,116        | 994          |
| 26 Renewable Resources           | 41           | 59           | 45           | 24            | 40           | 46           | 82           | 69            | 74           | 73           | 71           | 37           | 55           | 51           | 54           |
| 27 Small Thermal & Misc.         | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| <b>28 Contract Purchases</b>     | 280          | 280          | 285          | 274           | 278          | 281          | 255          | 252           | 254          | 271          | 169          | 159          | 167          | 166          | 246          |
| 29 Imports                       | 116          | 114          | 115          | 114           | 115          | 116          | 65           | 65            | 64           | 65           | 1            | 1            | 1            | 1            | 74           |
| 30 Intra-Regional Transfers (In) | 0            | 0            | 0            | 0             | 0            | 0            | 29           | 29            | 27           | 29           | 0            | 0            | 0            | 0            | 7            |
| 31 Non-Federal CER               | 138          | 131          | 137          | 132           | 135          | 138          | 137          | 137           | 132          | 137          | 137          | 126          | 138          | 137          | 135          |
| 32 Slice Transmission Loss Retu  | 27           | 35           | 33           | 28            | 27           | 28           | 24           | 21            | 31           | 40           | 31           | 32           | 28           | 28           | 30           |
| 33 Augmentation Purchases        | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| <b>34 Reserves &amp; Losses</b>  | -211         | -266         | -256         | -216          | -227         | -218         | -186         | -170          | -220         | -291         | -251         | -244         | -222         | -222         | -232         |
| 35 Contingency Reserves (Spinr   | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| 36 Contingency Reserves (Non-    | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| 37 Load Following Reserves       | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| 38 Generation Imbalance Reserv   | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0             | 0            | 0            | 0            | 0            | 0            | 0            | 0            |
| 39 Transmission Losses           | -211         | -266         | -256         | -216          | -227         | -218         | -186         | -170          | -220         | -291         | -251         | -244         | -222         | -222         | -232         |
| <b>40 Total Net Resources</b>    | <b>6,833</b> | <b>8,652</b> | <b>8,318</b> | <b>7,001</b>  | <b>7,383</b> | <b>7,093</b> | <b>6,047</b> | <b>5,500</b>  | <b>7,085</b> | <b>9,396</b> | <b>8,130</b> | <b>7,890</b> | <b>7,181</b> | <b>7,197</b> | <b>7,531</b> |
| <b>41 Total Surplus/Deficit</b>  | <b>70</b>    | <b>443</b>   | <b>-518</b>  | <b>-1,447</b> | <b>-618</b>  | <b>-358</b>  | <b>-694</b>  | <b>-1,091</b> | <b>291</b>   | <b>2,066</b> | <b>609</b>   | <b>437</b>   | <b>-149</b>  | <b>219</b>   | <b>0</b>     |

**Table 9.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2020 Water Year: 1937**  
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| A                                   | B                | C                | D                | E                | F                | G                | H                | I                | J                | K                | L                | M                | N                | O                | P                 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                             | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16            | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Firm Obligations</b>             |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| <b>1 Load Following</b>             | 1,310,222        | 1,425,505        | 1,670,312        | 1,670,014        | 1,494,766        | 1,401,469        | 699,724          | 699,724          | 1,368,928        | 1,485,667        | 1,612,761        | 773,767          | 773,767          | 1,311,062        | 17,697,689        |
| 2 Preference Customers              | 1,233,043        | 1,365,157        | 1,597,684        | 1,596,457        | 1,427,422        | 1,328,538        | 625,944          | 625,944          | 1,203,832        | 1,309,127        | 1,413,131        | 702,236          | 702,236          | 1,186,906        | 16,317,658        |
| 3 Federal Agencies                  | 48,903           | 55,249           | 68,417           | 68,675           | 61,654           | 56,886           | 24,608           | 24,608           | 45,678           | 47,208           | 53,414           | 26,532           | 26,532           | 45,252           | 653,614           |
| 4 USBR                              | 28,276           | 5,099            | 4,212            | 4,882            | 5,690            | 16,045           | 49,172           | 49,172           | 119,418          | 129,331          | 146,217          | 44,999           | 44,999           | 78,903           | 726,416           |
| 5 Federal Diversity                 | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| <b>6 Tier 1 Block</b>               | 235,213          | 374,039          | 383,941          | 423,546          | 361,152          | 377,498          | 90,164           | 90,164           | 65,222           | 8,808            | 150,137          | 84,998           | 84,998           | 271,477          | 3,001,358         |
| 7 Tier 1 Block                      | 235,213          | 374,039          | 383,941          | 423,546          | 361,152          | 377,498          | 90,164           | 90,164           | 65,222           | 8,808            | 150,137          | 84,998           | 84,998           | 271,477          | 3,001,358         |
| <b>8 Slice</b>                      | 1,172,037        | 1,361,100        | 1,425,275        | 1,322,848        | 1,166,053        | 1,235,344        | 559,123          | 534,845          | 1,230,059        | 1,486,164        | 1,336,837        | 668,397          | 622,580          | 1,121,016        | 15,241,678        |
| 9 Slice Block                       | 500,558          | 542,483          | 623,758          | 645,867          | 549,359          | 545,583          | 252,987          | 252,987          | 471,755          | 480,470          | 503,480          | 245,754          | 245,754          | 450,536          | 6,311,331         |
| 10 Slice Output from T1 System      | 671,479          | 818,617          | 801,517          | 676,981          | 616,694          | 689,762          | 306,136          | 281,857          | 758,304          | 1,005,694        | 833,356          | 422,643          | 376,826          | 670,481          | 8,930,347         |
| <b>11 Direct Service Industries</b> | 5,084            | 4,747            | 4,809            | 4,826            | 4,694            | 5,088            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,565            | 2,565            | 4,570            | 58,479            |
| 12 Direct Service Industry          | 5,084            | 4,747            | 4,809            | 4,826            | 4,694            | 5,088            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,565            | 2,565            | 4,570            | 58,479            |
| <b>13 Contract Deliveries</b>       | 547,192          | 524,458          | 534,150          | 489,198          | 459,530          | 483,289          | 231,798          | 231,798          | 469,535          | 463,320          | 494,552          | 255,346          | 273,068          | 467,987          | 5,925,221         |
| 14 Exports                          | 395,520          | 380,810          | 391,259          | 371,966          | 346,793          | 369,369          | 174,260          | 174,260          | 358,599          | 348,520          | 378,726          | 197,662          | 215,384          | 357,696          | 4,460,823         |
| 15 Intra-Regional Transfers (Out)   | 59,920           | 58,692           | 57,935           | 28,878           | 27,781           | 25,566           | 13,361           | 13,361           | 25,980           | 26,446           | 27,472           | 13,507           | 13,507           | 25,335           | 417,739           |
| 16 Firm Surplus Sale                | 91,752           | 84,956           | 84,956           | 88,354           | 84,956           | 88,354           | 44,177           | 44,177           | 84,956           | 88,354           | 88,354           | 44,177           | 44,177           | 84,956           | 1,046,658         |
| <b>17 Total Firm Obligations</b>    | <b>3,269,748</b> | <b>3,689,849</b> | <b>4,018,487</b> | <b>3,910,432</b> | <b>3,486,195</b> | <b>3,502,688</b> | <b>1,583,252</b> | <b>1,558,973</b> | <b>3,138,629</b> | <b>3,448,895</b> | <b>3,599,110</b> | <b>1,785,074</b> | <b>1,756,978</b> | <b>3,176,112</b> | <b>41,924,424</b> |

**Table 9.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2020 Water Year: 1937**  
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| A                                      | B              | C              | D              | E               | F              | G              | H               | I               | J              | K                | L              | M              | N              | O              | P                |
|--|----------------|----------------|----------------|-----------------|----------------|----------------|-----------------|-----------------|----------------|------------------|----------------|----------------|----------------|----------------|------------------|
| HLH-MWh                                | Oct            | Nov            | Dec            | Jan             | Feb            | Mar            | Apr1            | Apr16           | May            | Jun              | Jul            | Aug1           | Aug16          | Sep            | Sum              |
| <b>Net Resources</b>                   |                |                |                |                 |                |                |                 |                 |                |                  |                |                |                |                |                  |
| <b>18 Hydro Resources</b>              | 2,794,624      | 3,528,945      | 3,472,273      | 2,880,266       | 2,902,891      | 2,911,973      | 1,125,838       | 992,215         | 3,245,461      | 4,359,367        | 3,769,100      | 1,756,578      | 1,595,562      | 2,915,096      | 38,250,188       |
| 19 Regulated Hydro - Net               | 2,633,868      | 3,393,603      | 3,382,188      | 2,829,644       | 2,843,608      | 2,794,817      | 1,021,767       | 875,317         | 2,910,915      | 4,016,706        | 3,579,778      | 1,674,873      | 1,510,156      | 2,758,746      | 36,225,985       |
| 20 Independent Hydro - Net             | 159,600        | 134,202        | 88,794         | 49,281          | 58,069         | 115,862        | 103,429         | 116,256         | 333,409        | 341,531          | 188,227        | 81,158         | 84,858         | 155,298        | 2,009,974        |
| 21 Small Hydro - Net                   | 1,155          | 1,140          | 1,291          | 1,341           | 1,214          | 1,293          | 642             | 642             | 1,137          | 1,130            | 1,095          | 548            | 548            | 1,052          | 14,229           |
| <b>22 Other Resources</b>              | 499,873        | 466,756        | 464,684        | 474,323         | 464,937        | 485,981        | 251,240         | 248,236         | 479,412        | 496,634          | 495,874        | 239,714        | 245,088        | 470,133        | 5,782,886        |
| 23 Cogeneration Resources              | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| 24 Combustion Turbines                 | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| 25 Large Thermal Resources             | 482,112        | 446,400        | 446,400        | 464,256         | 446,400        | 464,256        | 232,128         | 232,128         | 446,400        | 464,256          | 464,256        | 232,128        | 232,128        | 446,400        | 5,499,648        |
| 26 Renewable Resources                 | 17,761         | 20,356         | 18,284         | 10,067          | 18,537         | 21,725         | 19,112          | 16,108          | 33,012         | 32,378           | 31,618         | 7,586          | 12,960         | 23,733         | 283,238          |
| 27 Small Thermal & Misc.               | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| <b>28 Contract Purchases</b>           | 170,894        | 161,396        | 160,949        | 164,312         | 157,819        | 166,179        | 82,454          | 81,990          | 161,404        | 172,963          | 169,213        | 84,357         | 83,481         | 159,846        | 1,977,256        |
| 29 Imports                             | 54,432         | 50,400         | 50,400         | 52,416          | 50,400         | 52,416         | 15,808          | 15,808          | 30,400         | 31,616           | 31,616         | 15,808         | 15,808         | 30,400         | 497,728          |
| 30 Intra-Regional Transfers (In)       | 2,117          | 1,360          | 1,240          | 1,206           | 840            | 1,997          | 11,502          | 11,502          | 21,720         | 23,546           | 23,088         | 11,180         | 11,180         | 21,840         | 144,319          |
| 31 Non-Federal CER                     | 101,520        | 94,000         | 94,000         | 97,760          | 94,800         | 98,592         | 49,296          | 49,296          | 94,800         | 98,592           | 98,592         | 49,296         | 49,296         | 94,800         | 1,164,640        |
| 32 Slice Transmission Loss Return      | 12,825         | 15,636         | 15,309         | 12,930          | 11,779         | 13,174         | 5,847           | 5,383           | 14,484         | 19,209           | 15,917         | 8,072          | 7,197          | 12,806         | 170,570          |
| 33 Augmentation Purchases              | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| <b>34 Reserves &amp; Losses</b>        | -103,764       | -123,990       | -122,293       | -105,087        | -105,159       | -106,404       | -43,633         | -39,576         | -116,758       | -150,743         | -132,789       | -62,305        | -57,613        | -105,872       | -1,375,988       |
| 35 Contingency Reserves (Spinning)     | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| 36 Contingency Reserves (Non-Spinning) | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| 37 Load Following Reserves             | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| 38 Generation Imbalance Reserves       | 0              | 0              | 0              | 0               | 0              | 0              | 0               | 0               | 0              | 0                | 0              | 0              | 0              | 0              | 0                |
| 39 Transmission Losses                 | -103,764       | -123,990       | -122,293       | -105,087        | -105,159       | -106,404       | -43,633         | -39,576         | -116,758       | -150,743         | -132,789       | -62,305        | -57,613        | -105,872       | -1,375,988       |
| <b>40 Total Net Resources</b>          | <b>3361627</b> | <b>4033106</b> | <b>3975613</b> | <b>3413815</b>  | <b>3420487</b> | <b>3457729</b> | <b>1415898</b>  | <b>1282866</b>  | <b>3769518</b> | <b>4878222</b>   | <b>4301398</b> | <b>2018343</b> | <b>1866518</b> | <b>3439203</b> | <b>44634342</b>  |
| <b>41 Total Surplus/Deficit</b>        | <b>91,878</b>  | <b>343,257</b> | <b>-42,874</b> | <b>-496,618</b> | <b>-65,708</b> | <b>-44,960</b> | <b>-167,353</b> | <b>-276,108</b> | <b>630,889</b> | <b>1,429,327</b> | <b>702,287</b> | <b>233,269</b> | <b>109,540</b> | <b>263,091</b> | <b>2,709,918</b> |

**Table 9.1.2**  
**Loads and Resources - Federal System**  
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| A                                   | B                | C                | D                | E                | F                | G                | H                | I                | J                | K                | L                | M                | N                | O                | P                 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                             | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16            | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Firm Obligations</b>             |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| <b>1 Load Following</b>             | 1,321,728        | 1,408,428        | 1,703,126        | 1,653,713        | 1,465,868        | 1,428,612        | 703,693          | 703,693          | 1,376,692        | 1,496,418        | 1,620,857        | 718,101          | 837,785          | 1,314,956        | 17,753,670        |
| 2 Preference Customers              | 1,242,395        | 1,347,180        | 1,627,131        | 1,578,643        | 1,397,385        | 1,350,053        | 628,136          | 628,136          | 1,207,022        | 1,315,180        | 1,416,603        | 649,815          | 758,117          | 1,186,331        | 16,332,127        |
| 3 Federal Agencies                  | 51,057           | 56,635           | 71,302           | 70,503           | 63,065           | 60,225           | 26,385           | 26,385           | 50,252           | 51,906           | 58,037           | 26,749           | 31,207           | 49,722           | 693,428           |
| 4 USBR                              | 28,276           | 4,613            | 4,693            | 4,567            | 5,417            | 18,335           | 49,172           | 49,172           | 119,418          | 129,331          | 146,217          | 41,538           | 48,461           | 78,903           | 728,114           |
| 5 Federal Diversity                 | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| <b>6 Tier 1 Block</b>               | 233,899          | 370,160          | 383,045          | 418,752          | 358,382          | 376,502          | 89,699           | 89,699           | 64,916           | 8,783            | 149,248          | 77,996           | 90,995           | 269,791          | 2,981,869         |
| 7 Tier 1 Block                      | 233,899          | 370,160          | 383,045          | 418,752          | 358,382          | 376,502          | 89,699           | 89,699           | 64,916           | 8,783            | 149,248          | 77,996           | 90,995           | 269,791          | 2,981,869         |
| <b>8 Slice</b>                      | 1,188,934        | 1,360,624        | 1,472,729        | 1,317,082        | 1,153,016        | 1,275,683        | 539,672          | 507,479          | 1,277,302        | 1,467,424        | 1,329,593        | 652,014          | 649,152          | 1,131,584        | 15,322,287        |
| 9 Slice Block                       | 514,598          | 534,526          | 664,824          | 636,389          | 560,158          | 581,377          | 259,940          | 259,940          | 484,492          | 493,750          | 516,917          | 233,050          | 271,891          | 463,263          | 6,475,113         |
| 10 Slice Output from T1 System      | 674,336          | 826,098          | 807,905          | 680,693          | 592,858          | 694,306          | 279,732          | 247,539          | 792,810          | 973,674          | 812,676          | 418,964          | 377,261          | 668,321          | 8,847,174         |
| <b>11 Direct Service Industries</b> | 5,084            | 4,740            | 4,809            | 4,826            | 4,533            | 5,081            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,368            | 2,762            | 4,570            | 58,303            |
| 12 Direct Service Industry          | 5,084            | 4,740            | 4,809            | 4,826            | 4,533            | 5,081            | 2,442            | 2,442            | 4,886            | 4,936            | 4,824            | 2,368            | 2,762            | 4,570            | 58,303            |
| <b>13 Contract Deliveries</b>       | 465,222          | 441,689          | 461,650          | 406,294          | 370,853          | 408,279          | 197,605          | 197,605          | 403,494          | 395,211          | 415,016          | 212,207          | 238,493          | 392,591          | 5,006,208         |
| 14 Exports                          | 371,047          | 356,926          | 369,823          | 337,999          | 305,290          | 337,545          | 163,548          | 163,548          | 337,999          | 327,096          | 346,902          | 180,769          | 201,816          | 327,096          | 4,127,404         |
| 15 Intra-Regional Transfers (Out)   | 27,517           | 25,512           | 27,638           | 6,575            | 6,312            | 4,077            | 1,963            | 1,963            | 3,775            | 3,926            | 3,926            | 1,812            | 2,114            | 3,775            | 120,882           |
| 16 Firm Surplus Sale                | 66,658           | 59,251           | 64,189           | 61,720           | 59,251           | 66,658           | 32,094           | 32,094           | 61,720           | 64,189           | 64,189           | 29,626           | 34,563           | 61,720           | 757,922           |
| <b>17 Total Firm Obligations</b>    | <b>3,214,867</b> | <b>3,585,642</b> | <b>4,025,359</b> | <b>3,800,666</b> | <b>3,352,651</b> | <b>3,494,157</b> | <b>1,533,112</b> | <b>1,500,919</b> | <b>3,127,289</b> | <b>3,372,772</b> | <b>3,519,538</b> | <b>1,662,685</b> | <b>1,819,187</b> | <b>3,113,492</b> | <b>41,122,337</b> |

**Table 9.1.2**  
**Loads and Resources - Federal System**  
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| A                                      | B                | C                | D                | E                | F                | G                | H                | I                | J                | K                | L                | M                | N                | O                | P                 |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| HLH-MWh                                | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1             | Apr16            | May              | Jun              | Jul              | Aug1             | Aug16            | Sep              | Sum               |
| <b>Net Resources</b>                   |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |
| <b>18 Hydro Resources</b>              | 2,824,446        | 3,522,440        | 3,433,529        | 2,867,096        | 2,765,030        | 2,878,500        | 1,115,631        | 990,141          | 3,316,843        | 4,364,169        | 3,665,199        | 1,750,402        | 1,599,737        | 2,901,679        | 37,994,843        |
| 19 Regulated Hydro - Net               | 2,663,691        | 3,389,136        | 3,342,371        | 2,817,584        | 2,707,914        | 2,760,057        | 1,011,561        | 873,243          | 2,982,298        | 4,021,508        | 3,475,877        | 1,670,615        | 1,512,367        | 2,745,329        | 35,973,550        |
| 20 Independent Hydro - Net             | 159,600          | 132,206          | 89,824           | 48,212           | 55,944           | 117,108          | 103,429          | 116,256          | 333,409          | 341,531          | 188,227          | 79,280           | 86,780           | 155,298          | 2,007,106         |
| 21 Small Hydro - Net                   | 1,155            | 1,098            | 1,333            | 1,299            | 1,172            | 1,335            | 642              | 642              | 1,137            | 1,130            | 1,095            | 506              | 590              | 1,052            | 14,187            |
| <b>22 Other Resources</b>              | 498,659          | 447,509          | 481,290          | 455,779          | 445,218          | 502,352          | 249,934          | 247,135          | 174,756          | 200,309          | 493,715          | 221,340          | 262,059          | 468,513          | 5,148,571         |
| 23 Cogeneration Resources              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| 24 Combustion Turbines                 | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| 25 Large Thermal Resources             | 482,112          | 428,544          | 464,256          | 446,400          | 428,544          | 482,112          | 232,128          | 232,128          | 144,000          | 170,144          | 464,256          | 214,272          | 249,984          | 446,400          | 4,885,280         |
| 26 Renewable Resources                 | 16,547           | 18,965           | 17,034           | 9,379            | 16,674           | 20,240           | 17,806           | 15,007           | 30,756           | 30,165           | 29,459           | 7,068            | 12,075           | 22,113           | 263,291           |
| 27 Small Thermal & Misc.               | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| <b>28 Contract Purchases</b>           | 169,696          | 155,170          | 166,439          | 158,201          | 150,716          | 170,077          | 80,847           | 80,232           | 160,343          | 169,605          | 114,530          | 53,698           | 60,518           | 107,965          | 1,798,037         |
| 29 Imports                             | 54,432           | 48,384           | 52,416           | 50,400           | 48,384           | 54,432           | 15,808           | 15,808           | 30,400           | 31,616           | 416              | 192              | 224              | 400              | 403,312           |
| 30 Intra-Regional Transfers (In)       | 0                | 0                | 0                | 0                | 0                | 0                | 10,400           | 10,400           | 20,000           | 20,800           | 0                | 0                | 0                | 0                | 61,600            |
| 31 Non-Federal CER                     | 102,384          | 91,008           | 98,592           | 94,800           | 91,008           | 102,384          | 49,296           | 49,296           | 94,800           | 98,592           | 98,592           | 45,504           | 53,088           | 94,800           | 1,164,144         |
| 32 Slice Transmission Loss Return      | 12,880           | 15,778           | 15,431           | 13,001           | 11,324           | 13,261           | 5,343            | 4,728            | 15,143           | 18,597           | 15,522           | 8,002            | 7,206            | 12,765           | 168,981           |
| 33 Augmentation Purchases              | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| <b>34 Reserves &amp; Losses</b>        | -104,578         | -123,026         | -121,812         | -103,950         | -100,252         | -106,022         | -43,244          | -39,429          | -109,799         | -141,985         | -128,015         | -60,634          | -57,587          | -103,885         | -1,344,218        |
| 35 Contingency Reserves (Spinning)     | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| 36 Contingency Reserves (Non-Spinning) | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| 37 Load Following Reserves             | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| 38 Generation Imbalance Reserves       | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                | 0                 |
| 39 Transmission Losses                 | -104,578         | -123,026         | -121,812         | -103,950         | -100,252         | -106,022         | -43,244          | -39,429          | -109,799         | -141,985         | -128,015         | -60,634          | -57,587          | -103,885         | -1,344,218        |
| <b>40 Total Net Resources</b>          | <b>3,388,223</b> | <b>4,002,093</b> | <b>3,959,446</b> | <b>3,377,126</b> | <b>3,260,712</b> | <b>3,444,908</b> | <b>1,403,169</b> | <b>1,278,079</b> | <b>3,542,144</b> | <b>4,592,099</b> | <b>4,145,429</b> | <b>1,964,806</b> | <b>1,864,727</b> | <b>3,374,273</b> | <b>43,597,233</b> |
| <b>41 Total Surplus/Deficit</b>        | <b>173,356</b>   | <b>416,452</b>   | <b>-65,913</b>   | <b>-423,540</b>  | <b>-91,938</b>   | <b>-49,249</b>   | <b>-129,943</b>  | <b>-222,840</b>  | <b>414,855</b>   | <b>1,219,327</b> | <b>625,891</b>   | <b>302,120</b>   | <b>45,540</b>    | <b>260,780</b>   | <b>2,474,896</b>  |

**Table 9.13**  
**Loads and Resources - Federal System**  
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| A                                   | B                | C                | D                | E                | F                | G                | H              | I              | J                | K                | L                | M              | N                | O                | P                 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|------------------|----------------|------------------|------------------|-------------------|
| LLH-MWh                             | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1           | Apr16          | May              | Jun              | Jul              | Aug1           | Aug16            | Sep              | Sum               |
| <b>Firm Obligations</b>             |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                |                  |                  |                   |
| <b>1 Load Following</b>             | 820,244          | 984,791          | 1,190,684        | 1,154,178        | 974,078          | 944,091          | 446,424        | 446,424        | 994,959          | 952,815          | 1,113,092        | 482,852        | 559,092          | 922,652          | 11,986,375        |
| 2 Preference Customers              | 735,793          | 936,567          | 1,131,576        | 1,099,484        | 924,346          | 870,732          | 390,699        | 390,699        | 836,723          | 797,658          | 923,146          | 402,110        | 465,601          | 779,494          | 10,684,625        |
| 3 Federal Agencies                  | 32,045           | 42,263           | 52,563           | 51,858           | 44,086           | 41,208           | 16,949         | 16,949         | 34,267           | 30,569           | 36,490           | 15,876         | 18,382           | 32,352           | 465,855           |
| 4 USBR                              | 52,406           | 5,962            | 6,545            | 2,837            | 5,646            | 32,151           | 38,776         | 38,776         | 123,969          | 124,588          | 153,457          | 64,867         | 75,109           | 110,806          | 835,895           |
| 5 Federal Diversity                 | 0                | 0                | 0                | 0                | 0                | 0                | 0              | 0              | 0                | 0                | 0                | 0              | 0                | 0                | 0                 |
| <b>6 Tier 1 Block</b>               | 158,018          | 254,140          | 263,649          | 288,456          | 243,969          | 256,600          | 60,673         | 60,673         | 45,775           | 6,436            | 102,780          | 53,531         | 61,983           | 184,098          | 2,040,780         |
| 7 Tier 1 Block                      | 158,018          | 254,140          | 263,649          | 288,456          | 243,969          | 256,600          | 60,673         | 60,673         | 45,775           | 6,436            | 102,780          | 53,531         | 61,983           | 184,098          | 2,040,780         |
| <b>8 Slice</b>                      | 721,361          | 927,706          | 1,029,147        | 911,491          | 765,250          | 825,899          | 363,119        | 349,227        | 839,855          | 894,986          | 758,964          | 358,809        | 394,329          | 735,503          | 9,875,647         |
| 9 Slice Block                       | 361,507          | 435,334          | 536,442          | 509,242          | 406,529          | 428,863          | 184,873        | 184,873        | 405,716          | 351,109          | 396,975          | 179,589        | 207,945          | 360,421          | 4,949,419         |
| 10 Slice Output from T1 System      | 359,854          | 492,372          | 492,706          | 402,249          | 358,721          | 397,036          | 178,245        | 164,354        | 434,139          | 543,877          | 361,989          | 179,220        | 186,383          | 375,082          | 4,926,228         |
| <b>11 Direct Service Industries</b> | 3,844            | 3,905            | 4,119            | 4,102            | 3,657            | 3,840            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,760          | 2,038            | 4,070            | 46,941            |
| 12 Direct Service Industry          | 3,844            | 3,905            | 4,119            | 4,102            | 3,657            | 3,840            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,760          | 2,038            | 4,070            | 46,941            |
| <b>13 Contract Deliveries</b>       | 143,398          | 147,740          | 157,899          | 125,317          | 111,168          | 122,907          | 53,649         | 53,649         | 121,375          | 107,749          | 131,446          | 66,854         | 92,405           | 120,983          | 1,556,538         |
| 14 Exports                          | 33,743           | 34,716           | 37,204           | 26,781           | 22,644           | 25,016           | 7,828          | 7,828          | 17,716           | 15,656           | 32,111           | 20,946         | 39,248           | 24,480           | 345,916           |
| 15 Intra-Regional Transfers (Ou     | 43,389           | 44,846           | 47,633           | 28,872           | 25,656           | 28,440           | 13,537         | 13,537         | 30,596           | 27,527           | 29,671           | 13,625         | 15,776           | 28,538           | 391,646           |
| 16 Firm Surplus Sale                | 66,266           | 68,177           | 73,062           | 69,664           | 62,867           | 69,452           | 32,283         | 32,283         | 73,062           | 64,567           | 69,664           | 32,283         | 37,381           | 67,965           | 818,976           |
| <b>17 Total Firm Obligations</b>    | <b>1,846,864</b> | <b>2,318,283</b> | <b>2,645,498</b> | <b>2,483,544</b> | <b>2,098,123</b> | <b>2,153,337</b> | <b>925,742</b> | <b>911,850</b> | <b>2,006,006</b> | <b>1,965,691</b> | <b>2,110,387</b> | <b>963,806</b> | <b>1,109,846</b> | <b>1,967,306</b> | <b>25,506,282</b> |



**Table 9.13**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2020 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                | B                | C                | D                | E                | F                | G                | H               | I               | J                | K                | L                | M               | N               | O                | P                 |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|-----------------|------------------|-------------------|
| LLH-MWh                          | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1            | Apr16           | May              | Jun              | Jul              | Aug1            | Aug16           | Sep              | Sum               |
| <b>Net Resources</b>             |                  |                  |                  |                  |                  |                  |                 |                 |                  |                  |                  |                 |                 |                  |                   |
| <b>18 Hydro Resources</b>        | 1,377,352        | 1,851,478        | 1,830,510        | 1,436,456        | 1,396,142        | 1,447,952        | 594,910         | 531,552         | 1,672,409        | 2,073,066        | 1,454,675        | 688,872         | 722,443         | 1,466,788        | 18,544,607        |
| 19 Regulated Hydro - Net         | 1,307,779        | 1,799,628        | 1,790,209        | 1,400,320        | 1,364,085        | 1,391,614        | 541,197         | 488,121         | 1,469,834        | 1,903,831        | 1,339,376        | 635,411         | 663,730         | 1,392,632        | 17,487,765        |
| 20 Independent Hydro - Net       | 68,738           | 50,945           | 39,222           | 35,092           | 31,158           | 55,329           | 53,243          | 42,961          | 201,604          | 168,410          | 114,436          | 53,062          | 58,250          | 73,315           | 1,045,765         |
| 21 Small Hydro - Net             | 835              | 905              | 1,080            | 1,044            | 899              | 1,009            | 470             | 470             | 972              | 826              | 864              | 400             | 463             | 842              | 11,076            |
| <b>22 Other Resources</b>        | 363,443          | 383,725          | 401,682          | 375,266          | 341,648          | 379,842          | 182,267         | 180,237         | 409,946          | 363,391          | 391,502          | 176,305         | 206,273         | 373,141          | 4,528,668         |
| 23 Cogeneration Resources        | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 24 Combustion Turbines           | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 25 Large Thermal Resources       | 348,192          | 358,236          | 383,904          | 366,048          | 330,336          | 364,932          | 169,632         | 169,632         | 383,904          | 339,264          | 366,048          | 169,632         | 196,416         | 357,120          | 4,303,296         |
| 26 Renewable Resources           | 15,251           | 25,489           | 17,778           | 9,218            | 11,312           | 14,910           | 12,635          | 10,605          | 26,042           | 24,127           | 25,454           | 6,673           | 9,857           | 16,021           | 225,372           |
| 27 Small Thermal & Misc.         | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| <b>28 Contract Purchases</b>     | 40,694           | 47,057           | 48,765           | 45,731           | 37,577           | 42,343           | 11,932          | 11,666          | 31,134           | 27,868           | 28,628           | 11,879          | 13,350          | 28,764           | 427,388           |
| 29 Imports                       | 31,512           | 32,421           | 34,744           | 33,128           | 29,896           | 33,027           | 7,752           | 7,752           | 17,544           | 15,504           | 16,728           | 7,752           | 8,976           | 16,320           | 293,056           |
| 30 Intra-Regional Transfers (In) | 1,685            | 1,380            | 1,170            | 656              | 829              | 1,406            | 775             | 775             | 1,858            | 1,976            | 1,706            | 703             | 815             | 1,440            | 17,174            |
| 31 Non-Federal CER               | 624              | 3,852            | 3,440            | 4,264            | 0                | 327              | 0               | 0               | 3,440            | 0                | 3,280            | 0               | 0               | 3,840            | 23,067            |
| 32 Slice Transmission Loss Retn  | 6,873            | 9,404            | 9,411            | 7,683            | 6,852            | 7,583            | 3,404           | 3,139           | 8,292            | 10,388           | 6,914            | 3,423           | 3,560           | 7,164            | 94,091            |
| 33 Augmentation Purchases        | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| <b>34 Reserves &amp; Losses</b>  | -53,484          | -68,071          | -68,076          | -55,470          | -52,940          | -55,830          | -23,601         | -21,661         | -63,829          | -74,142          | -56,496          | -26,398         | -28,338         | -55,933          | -704,270          |
| 35 Contingency Reserves (Spinr   | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 36 Contingency Reserves (Non-    | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 37 Load Following Reserves       | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 38 Generation Imbalance Reserv   | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 39 Transmission Losses           | -53,484          | -68,071          | -68,076          | -55,470          | -52,940          | -55,830          | -23,601         | -21,661         | -63,829          | -74,142          | -56,496          | -26,398         | -28,338         | -55,933          | -704,270          |
| <b>40 Total Net Resources</b>    | <b>1,728,004</b> | <b>2,214,190</b> | <b>2,212,881</b> | <b>1,801,983</b> | <b>1,722,427</b> | <b>1,814,308</b> | <b>765,508</b>  | <b>701,793</b>  | <b>2,049,660</b> | <b>2,390,183</b> | <b>1,818,309</b> | <b>850,658</b>  | <b>913,729</b>  | <b>1,812,760</b> | <b>22,796,393</b> |
| <b>41 Total Surplus/Deficit</b>  | <b>-118,860</b>  | <b>-104,092</b>  | <b>-432,618</b>  | <b>-681,562</b>  | <b>-375,696</b>  | <b>-339,029</b>  | <b>-160,234</b> | <b>-210,057</b> | <b>43,654</b>    | <b>424,492</b>   | <b>-292,077</b>  | <b>-113,148</b> | <b>-196,117</b> | <b>-154,546</b>  | <b>-2,709,889</b> |

**Table 9.13**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                   | B                | C                | D                | E                | F                | G                | H              | I              | J                | K                | L                | M                | N              | O                | P                 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------|----------------|------------------|------------------|------------------|------------------|----------------|------------------|-------------------|
| LLH-MWh                             | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1           | Apr16          | May              | Jun              | Jul              | Aug1             | Aug16          | Sep              | Sum               |
| <b>Firm Obligations</b>             |                  |                  |                  |                  |                  |                  |                |                |                  |                  |                  |                  |                |                  |                   |
| <b>1 Load Following</b>             | 825,057          | 1,013,582        | 1,166,962        | 1,188,030        | 959,922          | 920,037          | 448,409        | 448,409        | 999,979          | 957,926          | 1,118,075        | 535,067          | 509,588        | 924,642          | 12,015,683        |
| 2 Preference Customers              | 739,020          | 962,488          | 1,107,418        | 1,130,114        | 908,971          | 847,619          | 391,330        | 391,330        | 838,237          | 799,531          | 924,645          | 444,183          | 423,031        | 778,020          | 10,685,936        |
| 3 Federal Agencies                  | 33,631           | 44,645           | 53,480           | 54,763           | 45,422           | 42,556           | 18,303         | 18,303         | 37,773           | 33,808           | 39,972           | 19,190           | 18,276         | 35,817           | 495,939           |
| 4 USBR                              | 52,406           | 6,448            | 6,064            | 3,153            | 5,528            | 29,861           | 38,776         | 38,776         | 123,969          | 124,588          | 153,457          | 71,695           | 68,281         | 110,806          | 833,809           |
| 5 Federal Diversity                 | 0                | 0                | 0                | 0                | 0                | 0                | 0              | 0              | 0                | 0                | 0                | 0                | 0              | 0                | 0                 |
| <b>6 Tier 1 Block</b>               | 157,130          | 253,747          | 260,313          | 288,283          | 242,464          | 253,240          | 60,360         | 60,360         | 45,565           | 6,419            | 102,159          | 58,808           | 56,008         | 182,919          | 2,027,773         |
| 7 Tier 1 Block                      | 157,130          | 253,747          | 260,313          | 288,283          | 242,464          | 253,240          | 60,360         | 60,360         | 45,565           | 6,419            | 102,159          | 58,808           | 56,008         | 182,919          | 2,027,773         |
| <b>8 Slice</b>                      | 731,089          | 955,357          | 1,013,714        | 947,684          | 771,150          | 814,244          | 358,055        | 336,357        | 821,717          | 887,428          | 790,734          | 386,817          | 378,552        | 747,254          | 9,940,154         |
| 9 Slice Block                       | 371,647          | 469,110          | 524,188          | 547,305          | 420,116          | 418,532          | 189,955        | 189,955        | 416,670          | 360,813          | 407,569          | 203,918          | 194,208        | 370,604          | 5,084,588         |
| 10 Slice Output from T1 System      | 359,443          | 486,248          | 489,527          | 400,379          | 351,035          | 395,713          | 168,100        | 146,402        | 405,047          | 526,615          | 383,165          | 182,898          | 184,344        | 376,650          | 4,855,566         |
| <b>11 Direct Service Industries</b> | 3,844            | 3,900            | 4,119            | 4,102            | 3,531            | 3,835            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,945            | 1,852          | 4,070            | 46,805            |
| 12 Direct Service Industry          | 3,844            | 3,900            | 4,119            | 4,102            | 3,531            | 3,835            | 1,878          | 1,878          | 4,043            | 3,704            | 4,104            | 1,945            | 1,852          | 4,070            | 46,805            |
| <b>13 Contract Deliveries</b>       | 99,794           | 106,242          | 103,405          | 56,332           | 47,163           | 50,922           | 24,888         | 24,888         | 56,326           | 49,776           | 60,725           | 37,806           | 49,638         | 52,396           | 820,301           |
| 14 Exports                          | 23,868           | 25,781           | 25,092           | 0                | 0                | 0                | 0              | 0              | 0                | 0                | 7,019            | 10,298           | 23,440         | 0                | 115,498           |
| 15 Intra-Regional Transfers (Ou     | 27,784           | 28,462           | 27,702           | 3,253            | 2,725            | 2,935            | 1,434          | 1,434          | 3,246            | 2,869            | 3,095            | 1,585            | 1,510          | 3,020            | 111,056           |
| 16 Firm Surplus Sale                | 48,142           | 51,999           | 50,610           | 53,079           | 44,438           | 47,987           | 23,454         | 23,454         | 53,079           | 46,907           | 50,610           | 25,922           | 24,688         | 49,376           | 593,746           |
| <b>17 Total Firm Obligations</b>    | <b>1,816,914</b> | <b>2,332,828</b> | <b>2,548,512</b> | <b>2,484,430</b> | <b>2,024,231</b> | <b>2,042,278</b> | <b>893,589</b> | <b>871,891</b> | <b>1,927,629</b> | <b>1,905,253</b> | <b>2,075,797</b> | <b>1,020,443</b> | <b>995,638</b> | <b>1,911,281</b> | <b>24,850,716</b> |

**Table 9.13**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2021 Water Year: 1937**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| <b>A</b>                         | <b>B</b>         | <b>C</b>         | <b>D</b>         | <b>E</b>         | <b>F</b>         | <b>G</b>         | <b>H</b>        | <b>I</b>        | <b>J</b>         | <b>K</b>         | <b>L</b>         | <b>M</b>        | <b>N</b>        | <b>O</b>         | <b>P</b>          |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|-----------------|------------------|-------------------|
| LLH-MWh                          | Oct              | Nov              | Dec              | Jan              | Feb              | Mar              | Apr1            | Apr16           | May              | Jun              | Jul              | Aug1            | Aug16           | Sep              | Sum               |
| <b>Net Resources</b>             |                  |                  |                  |                  |                  |                  |                 |                 |                  |                  |                  |                 |                 |                  |                   |
| <b>18 Hydro Resources</b>        | 1,347,529        | 1,857,982        | 1,869,337        | 1,449,478        | 1,385,770        | 1,481,425        | 605,117         | 533,626         | 1,606,356        | 2,068,338        | 1,561,626        | 705,471         | 729,136         | 1,480,205        | 18,681,394        |
| 19 Regulated Hydro - Net         | 1,277,956        | 1,804,094        | 1,830,108        | 1,412,231        | 1,354,686        | 1,426,375        | 551,404         | 490,195         | 1,403,780        | 1,899,102        | 1,446,327        | 650,090         | 672,388         | 1,406,049        | 17,624,783        |
| 20 Independent Hydro - Net       | 68,738           | 52,941           | 38,191           | 36,161           | 30,206           | 54,083           | 53,243          | 42,961          | 201,604          | 168,410          | 114,436          | 54,940          | 56,328          | 73,315           | 1,045,556         |
| 21 Small Hydro - Net             | 835              | 947              | 1,038            | 1,086            | 878              | 967              | 470             | 470             | 972              | 826              | 864              | 442             | 421             | 842              | 11,055            |
| <b>22 Other Resources</b>        | 362,401          | 399,841          | 382,612          | 392,493          | 331,584          | 360,968          | 181,404         | 179,512         | 148,104          | 146,815          | 389,764          | 193,706         | 187,744         | 372,047          | 4,028,996         |
| 23 Cogeneration Resources        | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 24 Combustion Turbines           | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 25 Large Thermal Resources       | 348,192          | 376,092          | 366,048          | 383,904          | 321,408          | 347,076          | 169,632         | 169,632         | 123,840          | 124,336          | 366,048          | 187,488         | 178,560         | 357,120          | 3,819,376         |
| 26 Renewable Resources           | 14,209           | 23,749           | 16,564           | 8,589            | 10,176           | 13,892           | 11,772          | 9,880           | 24,264           | 22,479           | 23,716           | 6,218           | 9,184           | 14,927           | 209,620           |
| 27 Small Thermal & Misc.         | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| <b>28 Contract Purchases</b>     | 38,377           | 46,694           | 45,758           | 45,831           | 35,793           | 38,969           | 10,963          | 10,548          | 28,720           | 25,562           | 10,926           | 3,661           | 3,681           | 11,354           | 356,839           |
| 29 Imports                       | 31,512           | 34,037           | 33,128           | 34,744           | 29,088           | 31,411           | 7,752           | 7,752           | 17,544           | 15,504           | 328              | 168             | 160             | 320              | 243,448           |
| 30 Intra-Regional Transfers (In) | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 31 Non-Federal CER               | 0                | 3,370            | 3,280            | 3,440            | 0                | 0                | 0               | 0               | 3,440            | 0                | 3,280            | 0               | 0               | 3,840            | 20,650            |
| 32 Slice Transmission Loss Retn  | 6,865            | 9,287            | 9,350            | 7,647            | 6,705            | 7,558            | 3,211           | 2,796           | 7,736            | 10,058           | 7,318            | 3,493           | 3,521           | 7,194            | 92,741            |
| 33 Augmentation Purchases        | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| <b>34 Reserves &amp; Losses</b>  | -52,499          | -68,745          | -68,560          | -56,385          | -52,274          | -56,154          | -23,850         | -21,668         | -54,019          | -67,500          | -59,095          | -27,196         | -27,671         | -55,782          | -691,398          |
| 35 Contingency Reserves (Spinr   | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 36 Contingency Reserves (Non-    | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 37 Load Following Reserves       | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 38 Generation Imbalance Reserv   | 0                | 0                | 0                | 0                | 0                | 0                | 0               | 0               | 0                | 0                | 0                | 0               | 0               | 0                | 0                 |
| 39 Transmission Losses           | -52,499          | -68,745          | -68,560          | -56,385          | -52,274          | -56,154          | -23,850         | -21,668         | -54,019          | -67,500          | -59,095          | -27,196         | -27,671         | -55,782          | -691,398          |
| <b>40 Total Net Resources</b>    | <b>1,695,808</b> | <b>2,235,772</b> | <b>2,229,146</b> | <b>1,831,417</b> | <b>1,700,873</b> | <b>1,825,208</b> | <b>773,634</b>  | <b>702,019</b>  | <b>1,729,161</b> | <b>2,173,215</b> | <b>1,903,222</b> | <b>875,642</b>  | <b>892,890</b>  | <b>1,807,824</b> | <b>22,375,832</b> |
| <b>41 Total Surplus/Deficit</b>  | <b>-121,106</b>  | <b>-97,056</b>   | <b>-319,366</b>  | <b>-653,014</b>  | <b>-323,358</b>  | <b>-217,070</b>  | <b>-119,955</b> | <b>-169,872</b> | <b>-198,468</b>  | <b>267,961</b>   | <b>-172,575</b>  | <b>-144,801</b> | <b>-102,748</b> | <b>-103,457</b>  | <b>-2,474,884</b> |

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**10. FEDERAL LOADS AND RESOURCES SURPLUS/DEFICIT BY  
WATER YEAR .....147**

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**Table 10.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B     | C     | D     | E      | F      | G     | H      | I      | J     | K     | L     | M     | N     | O     | P     |
|--|-------|-------|-------|--------|--------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| Energy-aMW - Surplus Deficit           | Oct   | Nov   | Dec   | Jan    | Feb    | Mar   | Apr1   | Apr16  | May   | Jun   | Jul   | Aug1  | Aug16 | Sep   | Avg   |
| 1 1929 Federal Report Surplus Deficit  | -124  | 109   | -810  | -697   | -223   | -192  | -998   | -1,326 | 637   | 3,292 | -132  | 178   | -200  | 86    | 60    |
| 2 1930 Federal Report Surplus Deficit  | -56   | 248   | -798  | -1,476 | -206   | -237  | -329   | -739   | 773   | 1,266 | 843   | 384   | -91   | 3     | -5    |
| 3 1931 Federal Report Surplus Deficit  | -54   | 225   | -618  | -1,394 | -306   | -177  | -580   | -1,410 | 1,072 | 991   | 783   | 624   | -90   | 24    | -15   |
| 4 1932 Federal Report Surplus Deficit  | -297  | -137  | -705  | -785   | -1,737 | 1,632 | 2,312  | 4,386  | 5,698 | 4,761 | 2,158 | 961   | 535   | 438   | 1,267 |
| 5 1933 Federal Report Surplus Deficit  | -111  | -4    | 844   | 2,120  | 2,483  | 1,636 | 993    | 597    | 3,771 | 6,594 | 4,671 | 2,923 | 1,893 | 558   | 2,145 |
| 6 1934 Federal Report Surplus Deficit  | 483   | 2,620 | 4,062 | 4,999  | 5,043  | 3,789 | 4,538  | 4,619  | 4,567 | 3,762 | 297   | 127   | -52   | -233  | 2,823 |
| 7 1935 Federal Report Surplus Deficit  | -173  | -486  | -215  | 2,112  | 2,220  | 1,572 | -246   | 1,042  | 3,125 | 2,306 | 2,243 | 2,288 | -29   | -65   | 1,178 |
| 8 1936 Federal Report Surplus Deficit  | -190  | 69    | -831  | -1,318 | -588   | 21    | -304   | 2,758  | 5,958 | 4,345 | 1,408 | 119   | -245  | -276  | 815   |
| 9 1937 Federal Report Surplus Deficit  | -36   | 332   | -639  | -1,584 | -634   | -517  | -910   | -1,350 | 907   | 2,575 | 551   | 334   | -225  | 151   | 0     |
| 10 1938 Federal Report Surplus Deficit | -135  | 77    | 149   | 1,328  | 1,588  | 2,677 | 2,832  | 4,677  | 5,268 | 3,580 | 2,512 | 197   | -331  | 262   | 1,747 |
| 11 1939 Federal Report Surplus Deficit | -106  | -64   | -884  | 437    | 791    | 575   | 438    | 1,705  | 3,065 | 1,659 | 985   | -10   | -278  | -188  | 598   |
| 12 1940 Federal Report Surplus Deficit | 12    | 382   | 342   | 708    | 346    | 2,082 | 1,550  | 870    | 3,323 | 1,806 | -160  | -127  | -411  | -53   | 812   |
| 13 1941 Federal Report Surplus Deficit | -216  | 368   | -46   | -315   | 97     | 455   | -681   | -1,377 | 993   | 1,751 | 690   | 502   | -189  | 262   | 263   |
| 14 1942 Federal Report Surplus Deficit | -281  | 534   | 1,518 | 1,381  | 1,509  | -126  | -540   | 527    | 1,957 | 4,744 | 3,085 | 1,284 | 664   | 693   | 1,328 |
| 15 1943 Federal Report Surplus Deficit | -63   | -143  | -214  | 2,466  | 2,323  | 2,549 | 5,767  | 5,503  | 4,030 | 6,391 | 4,503 | 1,464 | 341   | 133   | 2,368 |
| 16 1944 Federal Report Surplus Deficit | -152  | 141   | -797  | -196   | -174   | -444  | -1,320 | -1,603 | 264   | 1,200 | 106   | 361   | -395  | -76   | -136  |
| 17 1945 Federal Report Surplus Deficit | -234  | 86    | -636  | -1,044 | -637   | -315  | -1,023 | -1,422 | 2,950 | 4,605 | 274   | 273   | -247  | -53   | 314   |
| 18 1946 Federal Report Surplus Deficit | -186  | 245   | 258   | 1,113  | 1,698  | 1,794 | 3,802  | 5,085  | 5,460 | 3,711 | 3,142 | 1,919 | 855   | 439   | 1,956 |
| 19 1947 Federal Report Surplus Deficit | -213  | 724   | 2,675 | 3,210  | 3,436  | 2,912 | 2,434  | 1,679  | 5,099 | 4,224 | 2,765 | 968   | 142   | 353   | 2,314 |
| 20 1948 Federal Report Surplus Deficit | 2,176 | 1,900 | 1,322 | 3,221  | 2,940  | 1,659 | 1,699  | 3,341  | 6,726 | 6,405 | 3,319 | 2,983 | 1,968 | 839   | 2,958 |
| 21 1949 Federal Report Surplus Deficit | 164   | 423   | 131   | 1,095  | 1,399  | 2,895 | 2,598  | 3,919  | 5,747 | 3,482 | 417   | -226  | -650  | -178  | 1,530 |
| 22 1950 Federal Report Surplus Deficit | -200  | 37    | 372   | 3,148  | 3,129  | 3,578 | 3,913  | 2,707  | 4,626 | 6,297 | 5,325 | 2,869 | 1,727 | 683   | 2,714 |
| 23 1951 Federal Report Surplus Deficit | 839   | 2,193 | 2,774 | 4,438  | 5,395  | 4,164 | 4,226  | 3,710  | 5,525 | 3,892 | 4,052 | 2,079 | 226   | 432   | 3,228 |
| 24 1952 Federal Report Surplus Deficit | 1,656 | 1,244 | 1,423 | 2,998  | 3,064  | 1,688 | 4,068  | 5,658  | 6,544 | 4,394 | 2,590 | 1,201 | -75   | -252  | 2,560 |
| 25 1953 Federal Report Surplus Deficit | -107  | 81    | -759  | 268    | 3,809  | 945   | -1,041 | -227   | 3,819 | 6,620 | 4,280 | 1,423 | 628   | 459   | 1,638 |
| 26 1954 Federal Report Surplus Deficit | 98    | 725   | 815   | 2,736  | 3,466  | 2,293 | 1,613  | 1,614  | 5,512 | 5,432 | 5,029 | 3,861 | 3,470 | 2,173 | 2,796 |
| 27 1955 Federal Report Surplus Deficit | 230   | 1,315 | 809   | 145    | 717    | -674  | -440   | -1,024 | 2,925 | 6,393 | 5,145 | 2,736 | 1,090 | 332   | 1,543 |
| 28 1956 Federal Report Surplus Deficit | 378   | 1,802 | 2,679 | 4,164  | 4,401  | 4,270 | 3,595  | 6,147  | 6,620 | 6,035 | 3,681 | 2,323 | 1,494 | 519   | 3,439 |
| 29 1957 Federal Report Surplus Deficit | 336   | 366   | 987   | 1,401  | 698    | 2,424 | 3,294  | 2,027  | 6,849 | 6,387 | 1,628 | 1,290 | -195  | -2    | 2,025 |
| 30 1958 Federal Report Surplus Deficit | -114  | 173   | 73    | 2,124  | 2,252  | 1,564 | 826    | 2,591  | 6,044 | 5,445 | 1,328 | 1,058 | -106  | 96    | 1,759 |
| 31 1959 Federal Report Surplus Deficit | 99    | 1,295 | 2,171 | 3,730  | 4,419  | 2,291 | 3,043  | 1,744  | 4,732 | 5,704 | 4,451 | 2,572 | 1,927 | 2,810 | 3,020 |

**Table 10.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| <b>A</b>                               | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> | <b>G</b> | <b>H</b> | <b>I</b> | <b>J</b> | <b>K</b> | <b>L</b> | <b>M</b> | <b>N</b> | <b>O</b> | <b>P</b> |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Energy-aMW - Surplus Deficit           | Oct      | Nov      | Dec      | Jan      | Feb      | Mar      | Apr1     | Apr16    | May      | Jun      | Jul      | Aug1     | Aug16    | Sep      | Avg      |
| 32 1960 Federal Report Surplus Deficit | 2,949    | 2,718    | 2,003    | 2,521    | 2,201    | 1,850    | 4,348    | 3,384    | 3,302    | 4,665    | 2,164    | 1,778    | -138     | 158      | 2,429    |
| 33 1961 Federal Report Surplus Deficit | 42       | 667      | 288      | 1,941    | 2,591    | 3,016    | 2,674    | 929      | 4,988    | 5,615    | 1,569    | 1,109    | 193      | -30      | 1,922    |
| 34 1962 Federal Report Surplus Deficit | -212     | 253      | 295      | 1,894    | 2,359    | 368      | 1,366    | 4,582    | 4,238    | 3,737    | 1,445    | 1,486    | 388      | 83       | 1,522    |
| 35 1963 Federal Report Surplus Deficit | 568      | 1,398    | 1,855    | 2,613    | 2,370    | 479      | -74      | -600     | 3,215    | 4,877    | 2,096    | 1,136    | 74       | 595      | 1,690    |
| 36 1964 Federal Report Surplus Deficit | -198     | 324      | 238      | 811      | 1,196    | -46      | 1,006    | 326      | 4,300    | 6,699    | 4,857    | 2,618    | 1,725    | 1,201    | 1,850    |
| 37 1965 Federal Report Surplus Deficit | 750      | 1,066    | 2,949    | 4,656    | 5,824    | 4,189    | 1,225    | 5,235    | 5,687    | 5,186    | 2,709    | 2,559    | 1,547    | 187      | 3,200    |
| 38 1966 Federal Report Surplus Deficit | 261      | 463      | 530      | 1,629    | 1,880    | 586      | 1,421    | 959      | 2,705    | 3,717    | 2,052    | 1,232    | -28      | 108      | 1,305    |
| 39 1967 Federal Report Surplus Deficit | -212     | 47       | 948      | 3,359    | 3,497    | 2,680    | 1,302    | -571     | 4,223    | 6,128    | 3,822    | 1,858    | 1,035    | 539      | 2,234    |
| 40 1968 Federal Report Surplus Deficit | 162      | 781      | 564      | 2,110    | 2,875    | 2,787    | -753     | -849     | 2,549    | 4,977    | 2,404    | 2,015    | 1,502    | 1,633    | 1,812    |
| 41 1969 Federal Report Surplus Deficit | 869      | 1,909    | 1,433    | 3,942    | 4,267    | 2,836    | 3,718    | 5,258    | 6,359    | 4,899    | 2,682    | 966      | -241     | 162      | 2,841    |
| 42 1970 Federal Report Surplus Deficit | 215      | 455      | -177     | 2,004    | 2,595    | 968      | -533     | -822     | 3,689    | 5,971    | 1,471    | 463      | -159     | -146     | 1,369    |
| 43 1971 Federal Report Surplus Deficit | -97      | 266      | 383      | 4,108    | 5,449    | 4,090    | 3,647    | 3,386    | 6,636    | 6,579    | 4,328    | 2,884    | 2,317    | 709      | 3,205    |
| 44 1972 Federal Report Surplus Deficit | 357      | 608      | 861      | 4,121    | 3,971    | 5,940    | 5,163    | 2,778    | 6,234    | 6,117    | 4,543    | 3,020    | 2,632    | 901      | 3,372    |
| 45 1973 Federal Report Surplus Deficit | 297      | 610      | 481      | 1,588    | 1,908    | 296      | -1,493   | -1,613   | 895      | 1,759    | 450      | 375      | -422     | -74      | 548      |
| 46 1974 Federal Report Surplus Deficit | -178     | 70       | 1,616    | 5,716    | 6,012    | 5,006    | 4,576    | 5,316    | 5,696    | 6,437    | 5,505    | 3,176    | 2,610    | 788      | 3,702    |
| 47 1975 Federal Report Surplus Deficit | -283     | 85       | -61      | 1,822    | 2,153    | 2,539    | 158      | 361      | 4,804    | 6,188    | 4,940    | 1,887    | 1,179    | 986      | 2,081    |
| 48 1976 Federal Report Surplus Deficit | 1,003    | 2,118    | 3,630    | 3,828    | 4,364    | 3,405    | 4,359    | 3,228    | 6,434    | 4,873    | 4,517    | 4,326    | 4,308    | 2,605    | 3,741    |
| 49 1977 Federal Report Surplus Deficit | 361      | 147      | -628     | 66       | -3       | -672     | -1,397   | -1,469   | 406      | 685      | 34       | 372      | -272     | -474     | -122     |
| 50 1978 Federal Report Surplus Deficit | -527     | 133      | 542      | 1,360    | 1,594    | 1,479    | 3,669    | 1,579    | 4,685    | 3,258    | 2,663    | 1,310    | 412      | 1,506    | 1,678    |
| 51 1979 Federal Report Surplus Deficit | 385      | 496      | -509     | 728      | 312      | 1,478    | -282     | 564      | 4,319    | 2,089    | 163      | 15       | -490     | 64       | 788      |
| 52 1980 Federal Report Surplus Deficit | -99      | 119      | -919     | 808      | -269     | 87       | 1,113    | 2,467    | 5,894    | 5,024    | 1,547    | 210      | -349     | 281      | 1,183    |
| 53 1981 Federal Report Surplus Deficit | -136     | 578      | 1,860    | 3,523    | 3,396    | 684      | -1,135   | -473     | 4,321    | 6,102    | 3,737    | 2,807    | 1,954    | 536      | 2,180    |
| 54 1982 Federal Report Surplus Deficit | 2        | 864      | 533      | 2,680    | 4,763    | 5,645    | 3,611    | 1,851    | 5,654    | 6,236    | 5,256    | 2,684    | 2,326    | 1,600    | 3,200    |
| 55 1983 Federal Report Surplus Deficit | 902      | 912      | 1,034    | 3,051    | 3,700    | 4,085    | 2,578    | 1,402    | 4,546    | 4,575    | 4,389    | 2,619    | 2,024    | 918      | 2,702    |
| 56 1984 Federal Report Surplus Deficit | 180      | 2,398    | 1,360    | 2,804    | 2,994    | 3,403    | 2,205    | 4,061    | 4,608    | 5,983    | 4,105    | 2,130    | 490      | 898      | 2,757    |
| 57 1985 Federal Report Surplus Deficit | 239      | 903      | 457      | 1,030    | 1,239    | 592      | 1,946    | 2,634    | 3,727    | 2,043    | 403      | -270     | -711     | 97       | 1,039    |
| 58 1986 Federal Report Surplus Deficit | 462      | 1,364    | 651      | 2,113    | 3,528    | 4,773    | 3,890    | 3,650    | 3,552    | 4,336    | 1,164    | 632      | -248     | -69      | 2,142    |
| 59 1987 Federal Report Surplus Deficit | -261     | 731      | 539      | 499      | 45       | 1,088    | -231     | 95       | 3,955    | 2,006    | 16       | -45      | -504     | -136     | 682      |
| 60 1988 Federal Report Surplus Deficit | -196     | 25       | -1,023   | -1,258   | -406     | -198     | -923     | -78      | 1,163    | 1,968    | 1,156    | 367      | -158     | 13       | 69       |
| 61 1989 Federal Report Surplus Deficit | -181     | 267      | 17       | -475     | -1,113   | 1,351    | 1,503    | 4,351    | 3,719    | 2,260    | 722      | 59       | -315     | 33       | 787      |
| 62 1990 Federal Report Surplus Deficit | -58      | 557      | 1,034    | 1,852    | 2,764    | 2,040    | 1,413    | 3,700    | 3,717    | 4,795    | 2,215    | 1,646    | 950      | 41       | 1,894    |



**Table 10.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B     | C     | D     | E     | F      | G     | H      | I      | J     | K     | L     | M     | N     | O     | P     |
|--|-------|-------|-------|-------|--------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| Energy-aMW - Surplus Deficit           | Oct   | Nov   | Dec   | Jan   | Feb    | Mar   | Apr1   | Apr16  | May   | Jun   | Jul   | Aug1  | Aug16 | Sep   | Avg   |
| 63 1991 Federal Report Surplus Deficit | -224  | 2,290 | 1,563 | 3,340 | 3,032  | 2,284 | 1,747  | 1,162  | 4,104 | 4,471 | 4,196 | 2,735 | 1,324 | 129   | 2,387 |
| 64 1992 Federal Report Surplus Deficit | -240  | 285   | -961  | 30    | 250    | 374   | -954   | -794   | 2,934 | 1,441 | -53   | 70    | -352  | -249  | 233   |
| 65 1993 Federal Report Surplus Deficit | -203  | 200   | -513  | -817  | -1,301 | 617   | 99     | -895   | 4,869 | 3,556 | 1,411 | 316   | -170  | 65    | 637   |
| 66 1994 Federal Report Surplus Deficit | -58   | 413   | -417  | -823  | 85     | -227  | -863   | 476    | 2,253 | 1,685 | 938   | 241   | -283  | -27   | 299   |
| 67 1995 Federal Report Surplus Deficit | -149  | -143  | -474  | 647   | 1,693  | 2,280 | 531    | -835   | 3,836 | 4,924 | 2,308 | 965   | -78   | 553   | 1,310 |
| 68 1996 Federal Report Surplus Deficit | 851   | 2,995 | 4,919 | 5,374 | 5,544  | 5,457 | 3,916  | 5,655  | 5,678 | 5,518 | 4,288 | 2,452 | 1,483 | 536   | 3,988 |
| 69 1997 Federal Report Surplus Deficit | 61    | 793   | 1,503 | 5,132 | 5,643  | 5,542 | 4,285  | 6,000  | 6,527 | 6,295 | 4,687 | 2,486 | 2,408 | 1,539 | 3,769 |
| 70 1998 Federal Report Surplus Deficit | 2,395 | 1,756 | 447   | 1,194 | 2,815  | 1,318 | -184   | -361   | 6,045 | 5,921 | 2,622 | 1,942 | 1,051 | 58    | 2,148 |
| 71 1999 Federal Report Surplus Deficit | -79   | 19    | 1,270 | 3,690 | 3,969  | 4,591 | 2,170  | 2,962  | 4,556 | 5,876 | 4,918 | 3,777 | 2,954 | 580   | 2,944 |
| 72 2000 Federal Report Surplus Deficit | 45    | 2,565 | 1,901 | 1,908 | 2,230  | 2,098 | 3,325  | 4,451  | 4,132 | 1,771 | 2,085 | 1,430 | -321  | -26   | 1,924 |
| 73 2001 Federal Report Surplus Deficit | -57   | 71    | -704  | -236  | -209   | -124  | -1,313 | -1,516 | 830   | 507   | 277   | 433   | -360  | -479  | -123  |
| 74 2002 Federal Report Surplus Deficit | -608  | 16    | -37   | -634  | 74     | 304   | 1,151  | 3,133  | 3,185 | 5,550 | 3,491 | 642   | 63    | 96    | 1,157 |
| 75 2003 Federal Report Surplus Deficit | -15   | 330   | -665  | -417  | 623    | 2,025 | 706    | 773    | 2,028 | 4,788 | 863   | -349  | -519  | -408  | 782   |
| 76 2004 Federal Report Surplus Deficit | -157  | 696   | 463   | 7     | -335   | 473   | 412    | 303    | 2,466 | 3,197 | 852   | -155  | -133  | 849   | 727   |
| 77 2005 Federal Report Surplus Deficit | 357   | 517   | 776   | 1,356 | 2,109  | 484   | -1,123 | -875   | 2,561 | 2,753 | 1,246 | 378   | -251  | -193  | 916   |
| 78 2006 Federal Report Surplus Deficit | -105  | 677   | 471   | 2,652 | 3,237  | 1,884 | 4,331  | 4,364  | 5,739 | 5,549 | 1,716 | 350   | -403  | -484  | 2,127 |
| 79 2007 Federal Report Surplus Deficit | -204  | 718   | 531   | 1,973 | 1,450  | 3,135 | 1,783  | 630    | 4,360 | 3,575 | 1,913 | 54    | -591  | -681  | 1,478 |
| 80 2008 Federal Report Surplus Deficit | -26   | 560   | -229  | 124   | 478    | 621   | -21    | -815   | 4,762 | 6,544 | 3,233 | 725   | 466   | 101   | 1,363 |

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**Table 10.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B     | C     | D     | E      | F      | G     | H      | I      | J     | K     | L     | M     | N     | O     | P     |
|--|-------|-------|-------|--------|--------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| Energy-aMW - Surplus Deficit           | Oct   | Nov   | Dec   | Jan    | Feb    | Mar   | Apr1   | Apr16  | May   | Jun   | Jul   | Aug1  | Aug16 | Sep   | Avg   |
| 1 1929 Federal Report Surplus Deficit  | -17   | 221   | -689  | -560   | -206   | -34   | -778   | -1,085 | 24    | 2,788 | -74   | 282   | -122  | 154   | 59    |
| 2 1930 Federal Report Surplus Deficit  | 50    | 359   | -676  | -1,339 | -190   | -79   | -50    | -343   | 158   | 747   | 898   | 456   | -42   | 70    | -1    |
| 3 1931 Federal Report Surplus Deficit  | 52    | 336   | -497  | -1,257 | -289   | -19   | -310   | -1,175 | 453   | 460   | 838   | 716   | -25   | 91    | -18   |
| 4 1932 Federal Report Surplus Deficit  | -190  | -26   | -584  | -648   | -1,721 | 1,742 | 2,550  | 4,851  | 5,251 | 4,430 | 2,220 | 1,045 | 595   | 506   | 1,306 |
| 5 1933 Federal Report Surplus Deficit  | -5    | 107   | 955   | 2,147  | 2,590  | 1,809 | 1,350  | 1,014  | 3,168 | 6,516 | 5,033 | 3,014 | 1,960 | 625   | 2,214 |
| 6 1934 Federal Report Surplus Deficit  | 590   | 2,418 | 2,995 | 4,239  | 5,042  | 3,819 | 4,800  | 4,953  | 3,974 | 3,385 | 352   | 202   | -3    | -165  | 2,615 |
| 7 1935 Federal Report Surplus Deficit  | -66   | -375  | -94   | 1,988  | 2,262  | 1,942 | 18     | 1,578  | 2,515 | 1,783 | 2,305 | 2,366 | 22    | 2     | 1,183 |
| 8 1936 Federal Report Surplus Deficit  | -84   | 180   | -710  | -1,181 | -571   | 178   | -30    | 3,128  | 5,449 | 3,917 | 1,486 | 194   | -196  | -209  | 839   |
| 9 1937 Federal Report Surplus Deficit  | 70    | 443   | -518  | -1,447 | -618   | -358  | -694   | -1,091 | 291   | 2,066 | 609   | 437   | -149  | 219   | 0     |
| 10 1938 Federal Report Surplus Deficit | -29   | 188   | 270   | 1,454  | 1,583  | 2,823 | 3,044  | 5,015  | 4,773 | 3,144 | 2,575 | 273   | -282  | 330   | 1,760 |
| 11 1939 Federal Report Surplus Deficit | 1     | 48    | -763  | 589    | 789    | 734   | 657    | 2,201  | 2,428 | 1,107 | 1,041 | 65    | -229  | -120  | 598   |
| 12 1940 Federal Report Surplus Deficit | 118   | 493   | 463   | 845    | 362    | 2,190 | 1,809  | 1,411  | 2,710 | 1,290 | -108  | -55   | -362  | 14    | 818   |
| 13 1941 Federal Report Surplus Deficit | -110  | 480   | 76    | -179   | 111    | 614   | -447   | -1,160 | 369   | 1,239 | 744   | 577   | -135  | 330   | 257   |
| 14 1942 Federal Report Surplus Deficit | -175  | 645   | 1,573 | 1,507  | 1,510  | 32    | -259   | 1,069  | 1,335 | 4,411 | 3,153 | 1,392 | 748   | 761   | 1,348 |
| 15 1943 Federal Report Surplus Deficit | 43    | -31   | -93   | 2,539  | 2,258  | 2,617 | 5,837  | 5,589  | 3,412 | 6,028 | 4,558 | 1,558 | 412   | 201   | 2,345 |
| 16 1944 Federal Report Surplus Deficit | -46   | 252   | -676  | -44    | -175   | -285  | -1,062 | -1,381 | -352  | 686   | 159   | 433   | -346  | -9    | -140  |
| 17 1945 Federal Report Surplus Deficit | -128  | 198   | -515  | -907   | -621   | -157  | -784   | -1,182 | 2,332 | 4,289 | 336   | 352   | -194  | 15    | 329   |
| 18 1946 Federal Report Surplus Deficit | -80   | 365   | 379   | 1,257  | 1,689  | 1,860 | 3,991  | 5,330  | 5,442 | 3,282 | 3,202 | 2,003 | 913   | 507   | 2,000 |
| 19 1947 Federal Report Surplus Deficit | -106  | 836   | 2,650 | 3,335  | 3,405  | 2,964 | 2,626  | 2,196  | 4,622 | 3,883 | 2,828 | 1,056 | 204   | 420   | 2,318 |
| 20 1948 Federal Report Surplus Deficit | 2,281 | 2,039 | 1,398 | 3,324  | 2,897  | 1,819 | 2,040  | 3,782  | 6,713 | 6,570 | 3,370 | 3,066 | 2,024 | 906   | 3,064 |
| 21 1949 Federal Report Surplus Deficit | 271   | 534   | 252   | 1,226  | 1,412  | 2,915 | 2,924  | 4,244  | 5,327 | 3,102 | 475   | -151  | -601  | -110  | 1,549 |
| 22 1950 Federal Report Surplus Deficit | -94   | 148   | 494   | 3,015  | 3,237  | 3,472 | 4,031  | 3,082  | 4,054 | 6,168 | 5,797 | 2,975 | 1,804 | 751   | 2,744 |
| 23 1951 Federal Report Surplus Deficit | 946   | 2,350 | 2,454 | 4,069  | 5,153  | 4,074 | 4,452  | 4,069  | 4,987 | 3,546 | 4,108 | 2,176 | 297   | 499   | 3,126 |
| 24 1952 Federal Report Surplus Deficit | 1,763 | 1,355 | 1,499 | 3,157  | 2,997  | 1,835 | 4,204  | 5,819  | 6,152 | 4,018 | 2,651 | 1,276 | -23   | -184  | 2,568 |
| 25 1953 Federal Report Surplus Deficit | 0     | 192   | -638  | 138    | 3,901  | 1,135 | -749   | 212    | 3,227 | 6,368 | 4,346 | 1,506 | 687   | 527   | 1,649 |
| 26 1954 Federal Report Surplus Deficit | 204   | 836   | 938   | 2,627  | 3,457  | 2,627 | 1,897  | 2,086  | 5,154 | 5,585 | 5,501 | 3,965 | 3,544 | 2,180 | 2,902 |
| 27 1955 Federal Report Surplus Deficit | 337   | 1,426 | 924   | 281    | 733    | -515  | -386   | -515   | 2,313 | 6,563 | 5,682 | 2,821 | 1,152 | 400   | 1,642 |
| 28 1956 Federal Report Surplus Deficit | 485   | 1,942 | 2,585 | 4,282  | 4,347  | 4,012 | 3,761  | 6,112  | 6,675 | 6,231 | 3,741 | 2,406 | 1,553 | 587   | 3,476 |
| 29 1957 Federal Report Surplus Deficit | 443   | 477   | 1,090 | 1,508  | 739    | 2,401 | 3,796  | 2,511  | 6,546 | 6,406 | 1,686 | 1,366 | -146  | 66    | 2,098 |
| 30 1958 Federal Report Surplus Deficit | -7    | 284   | 194   | 2,200  | 2,207  | 1,723 | 1,092  | 3,080  | 5,706 | 5,169 | 1,386 | 1,133 | -57   | 163   | 1,798 |
| 31 1959 Federal Report Surplus Deficit | 206   | 1,406 | 2,185 | 3,797  | 4,503  | 2,281 | 3,200  | 2,151  | 4,415 | 5,568 | 4,516 | 2,684 | 2,015 | 2,813 | 3,046 |

**Table 10.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B     | C     | D     | E      | F      | G     | H      | I      | J     | K     | L     | M     | N     | O     | P     |
|--|-------|-------|-------|--------|--------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| Energy-aMW - Surplus Deficit           | Oct   | Nov   | Dec   | Jan    | Feb    | Mar   | Apr1   | Apr16  | May   | Jun   | Jul   | Aug1  | Aug16 | Sep   | Avg   |
| 32 1960 Federal Report Surplus Deficit | 3,029 | 2,652 | 1,928 | 2,705  | 2,102  | 2,040 | 4,557  | 3,702  | 2,681 | 4,333 | 2,230 | 1,862 | -77   | 226   | 2,408 |
| 33 1961 Federal Report Surplus Deficit | 149   | 778   | 409   | 2,025  | 2,545  | 3,215 | 2,959  | 1,356  | 4,535 | 5,699 | 1,630 | 1,184 | 242   | 37    | 1,983 |
| 34 1962 Federal Report Surplus Deficit | -106  | 364   | 417   | 2,040  | 2,278  | 523   | 1,554  | 4,932  | 3,647 | 3,393 | 1,509 | 1,569 | 445   | 151   | 1,528 |
| 35 1963 Federal Report Surplus Deficit | 675   | 1,510 | 1,866 | 2,574  | 2,324  | 637   | 204    | -202   | 2,617 | 4,619 | 2,158 | 1,212 | 123   | 663   | 1,686 |
| 36 1964 Federal Report Surplus Deficit | -91   | 435   | 359   | 963    | 1,194  | 109   | 1,316  | 799    | 3,705 | 6,578 | 5,013 | 2,634 | 1,800 | 1,269 | 1,901 |
| 37 1965 Federal Report Surplus Deficit | 857   | 1,178 | 2,911 | 4,696  | 5,625  | 4,016 | 1,320  | 5,432  | 5,600 | 4,908 | 2,766 | 2,634 | 1,596 | 255   | 3,178 |
| 38 1966 Federal Report Surplus Deficit | 367   | 574   | 651   | 1,782  | 1,853  | 610   | 1,956  | 1,445  | 2,076 | 3,194 | 2,114 | 1,312 | 25    | 176   | 1,307 |
| 39 1967 Federal Report Surplus Deficit | -105  | 159   | 1,066 | 3,292  | 3,522  | 2,714 | 1,461  | -241   | 3,621 | 6,255 | 3,879 | 1,940 | 1,094 | 607   | 2,253 |
| 40 1968 Federal Report Surplus Deficit | 269   | 893   | 686   | 2,183  | 2,829  | 2,960 | -483   | -584   | 1,926 | 4,647 | 2,454 | 2,127 | 1,587 | 1,701 | 1,815 |
| 41 1969 Federal Report Surplus Deficit | 975   | 2,044 | 1,510 | 4,039  | 4,339  | 2,818 | 4,006  | 5,529  | 6,054 | 4,764 | 2,755 | 1,052 | -181  | 230   | 2,880 |
| 42 1970 Federal Report Surplus Deficit | 322   | 566   | -56   | 2,078  | 2,549  | 1,215 | -324   | -529   | 3,057 | 5,694 | 1,534 | 545   | -101  | -79   | 1,379 |
| 43 1971 Federal Report Surplus Deficit | 10    | 378   | 505   | 4,247  | 4,884  | 3,979 | 3,800  | 3,767  | 6,583 | 6,669 | 4,432 | 2,974 | 2,384 | 777   | 3,233 |
| 44 1972 Federal Report Surplus Deficit | 464   | 719   | 983   | 3,736  | 3,769  | 6,022 | 5,559  | 3,271  | 6,252 | 6,411 | 4,570 | 3,116 | 2,703 | 969   | 3,434 |
| 45 1973 Federal Report Surplus Deficit | 403   | 721   | 602   | 1,714  | 1,913  | 453   | -1,280 | -1,420 | 279   | 1,229 | 505   | 475   | -348  | -7    | 536   |
| 46 1974 Federal Report Surplus Deficit | -72   | 181   | 1,629 | 4,825  | 5,800  | 4,837 | 4,725  | 5,483  | 5,688 | 6,594 | 5,906 | 3,258 | 2,668 | 856   | 3,680 |
| 47 1975 Federal Report Surplus Deficit | -177  | 196   | 60    | 1,909  | 2,113  | 2,747 | 336    | 866    | 4,219 | 6,074 | 5,083 | 1,992 | 1,260 | 1,054 | 2,126 |
| 48 1976 Federal Report Surplus Deficit | 1,104 | 2,273 | 3,139 | 3,857  | 4,370  | 3,375 | 4,451  | 3,730  | 6,082 | 4,634 | 4,698 | 4,421 | 4,567 | 2,607 | 3,725 |
| 49 1977 Federal Report Surplus Deficit | 467   | 258   | -507  | 218    | -5     | -514  | -1,189 | -1,290 | -141  | 153   | 86    | 456   | -212  | -406  | -126  |
| 50 1978 Federal Report Surplus Deficit | -421  | 244   | 622   | 1,583  | 1,637  | 1,527 | 3,939  | 2,107  | 4,106 | 2,760 | 2,728 | 1,411 | 489   | 1,573 | 1,691 |
| 51 1979 Federal Report Surplus Deficit | 491   | 607   | -387  | 864    | 328    | 1,636 | 33     | 976    | 3,768 | 1,582 | 223   | 90    | -441  | 132   | 802   |
| 52 1980 Federal Report Surplus Deficit | 7     | 231   | -798  | 945    | -253   | 245   | 1,358  | 2,996  | 5,467 | 4,733 | 1,607 | 288   | -297  | 349   | 1,230 |
| 53 1981 Federal Report Surplus Deficit | -29   | 690   | 1,805 | 3,105  | 3,284  | 842   | -849   | -104   | 3,768 | 6,020 | 3,837 | 2,890 | 2,013 | 603   | 2,153 |
| 54 1982 Federal Report Surplus Deficit | 108   | 975   | 654   | 2,753  | 4,567  | 5,492 | 3,717  | 2,535  | 5,283 | 6,068 | 5,581 | 2,692 | 2,393 | 1,668 | 3,226 |
| 55 1983 Federal Report Surplus Deficit | 1,009 | 1,023 | 1,137 | 3,149  | 3,522  | 4,007 | 2,906  | 1,879  | 4,029 | 4,308 | 4,402 | 2,709 | 2,091 | 986   | 2,695 |
| 56 1984 Federal Report Surplus Deficit | 286   | 2,519 | 1,445 | 2,874  | 2,889  | 3,340 | 2,464  | 4,351  | 4,064 | 5,871 | 4,132 | 2,215 | 551   | 966   | 2,757 |
| 57 1985 Federal Report Surplus Deficit | 345   | 1,015 | 578   | 1,243  | 1,263  | 750   | 2,168  | 3,062  | 3,106 | 1,487 | 458   | -180  | -647  | 165   | 1,046 |
| 58 1986 Federal Report Surplus Deficit | 569   | 1,477 | 772   | 2,186  | 3,497  | 4,597 | 4,033  | 3,980  | 2,947 | 4,089 | 1,220 | 707   | -199  | -1    | 2,119 |
| 59 1987 Federal Report Surplus Deficit | -154  | 842   | 660   | 635    | 61     | 1,245 | 71     | 471    | 3,338 | 1,480 | 71    | 52    | -434  | -68   | 688   |
| 60 1988 Federal Report Surplus Deficit | -89   | 136   | -902  | -1,121 | -390   | -40   | -658   | 425    | 543   | 1,456 | 1,210 | 454   | -96   | 80    | 79    |
| 61 1989 Federal Report Surplus Deficit | -75   | 378   | 138   | -319   | -1,098 | 1,495 | 1,722  | 4,677  | 3,082 | 1,758 | 780   | 147   | -251  | 101   | 791   |
| 62 1990 Federal Report Surplus Deficit | 49    | 669   | 1,138 | 1,811  | 2,985  | 2,113 | 1,583  | 4,113  | 3,090 | 4,745 | 2,267 | 1,735 | 1,016 | 108   | 1,922 |

**Table 10.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B     | C     | D     | E     | F      | G     | H      | I      | J     | K     | L     | M     | N     | O     | P     |
|--|-------|-------|-------|-------|--------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| Energy-aMW - Surplus Deficit           | Oct   | Nov   | Dec   | Jan   | Feb    | Mar   | Apr1   | Apr16  | May   | Jun   | Jul   | Aug1  | Aug16 | Sep   | Avg   |
| 63 1991 Federal Report Surplus Deficit | -118  | 2,359 | 1,584 | 3,080 | 3,033  | 2,339 | 1,921  | 1,568  | 3,492 | 4,277 | 4,304 | 2,745 | 1,393 | 196   | 2,358 |
| 64 1992 Federal Report Surplus Deficit | -133  | 396   | -840  | 167   | 266    | 532   | -709   | -489   | 2,313 | 913   | 2     | 174   | -275  | -181  | 232   |
| 65 1993 Federal Report Surplus Deficit | -96   | 312   | -391  | -680  | -1,285 | 775   | 377    | -610   | 4,378 | 3,095 | 1,457 | 416   | -93   | 133   | 658   |
| 66 1994 Federal Report Surplus Deficit | 49    | 524   | -296  | -687  | 101    | -69   | -603   | 985    | 1,615 | 1,132 | 992   | 330   | -218  | 41    | 303   |
| 67 1995 Federal Report Surplus Deficit | -43   | -32   | -353  | 784   | 1,648  | 2,427 | 797    | -394   | 3,237 | 4,646 | 2,376 | 1,049 | -20   | 621   | 1,331 |
| 68 1996 Federal Report Surplus Deficit | 958   | 2,858 | 3,617 | 4,520 | 5,386  | 5,290 | 4,046  | 5,820  | 5,191 | 5,173 | 4,340 | 2,546 | 1,551 | 603   | 3,732 |
| 69 1997 Federal Report Surplus Deficit | 167   | 904   | 1,563 | 5,178 | 5,508  | 5,381 | 4,463  | 6,121  | 6,546 | 6,513 | 4,767 | 2,504 | 2,485 | 1,607 | 3,815 |
| 70 1998 Federal Report Surplus Deficit | 2,482 | 1,868 | 568   | 1,331 | 2,761  | 1,474 | 87     | 76     | 5,663 | 5,631 | 2,655 | 2,101 | 1,101 | 125   | 2,183 |
| 71 1999 Federal Report Surplus Deficit | 28    | 130   | 1,371 | 3,703 | 3,670  | 4,685 | 2,509  | 3,326  | 4,003 | 5,678 | 5,250 | 3,808 | 3,019 | 648   | 2,957 |
| 72 2000 Federal Report Surplus Deficit | 151   | 2,325 | 1,842 | 2,010 | 2,181  | 2,254 | 3,465  | 4,757  | 3,571 | 1,261 | 2,144 | 1,505 | -272  | 42    | 1,870 |
| 73 2001 Federal Report Surplus Deficit | 50    | 183   | -583  | -69   | -230   | 35    | -1,077 | -1,307 | 209   | -19   | 332   | 518   | -301  | -411  | -130  |
| 74 2002 Federal Report Surplus Deficit | -502  | 127   | 84    | -495  | 87     | 472   | 1,379  | 3,555  | 2,567 | 5,451 | 3,592 | 726   | 124   | 163   | 1,202 |
| 75 2003 Federal Report Surplus Deficit | 92    | 441   | -544  | -280  | 639    | 2,180 | 1,052  | 1,243  | 1,407 | 4,480 | 917   | -274  | -470  | -341  | 808   |
| 76 2004 Federal Report Surplus Deficit | -51   | 807   | 584   | 143   | -319   | 631   | 759    | 724    | 1,850 | 2,705 | 917   | -25   | -31   | 917   | 744   |
| 77 2005 Federal Report Surplus Deficit | 464   | 628   | 888   | 1,482 | 2,098  | 680   | -915   | -656   | 1,996 | 2,222 | 1,306 | 481   | -175  | -126  | 911   |
| 78 2006 Federal Report Surplus Deficit | 2     | 789   | 592   | 2,760 | 3,162  | 2,040 | 4,471  | 4,651  | 5,313 | 5,431 | 1,767 | 425   | -354  | -417  | 2,156 |
| 79 2007 Federal Report Surplus Deficit | -97   | 830   | 652   | 2,050 | 1,464  | 3,246 | 2,017  | 1,159  | 3,769 | 3,036 | 1,964 | 130   | -542  | -613  | 1,475 |
| 80 2008 Federal Report Surplus Deficit | 80    | 671   | -108  | 269   | 485    | 818   | 208    | -448   | 4,211 | 6,803 | 3,283 | 825   | 542   | 169   | 1,439 |

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**Table 10.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| <b>A</b>                               | <b>B</b>  | <b>C</b>  | <b>D</b>  | <b>E</b>  | <b>F</b>  | <b>G</b>  | <b>H</b>  | <b>I</b>  | <b>J</b>  | <b>K</b>  | <b>L</b>  | <b>M</b> | <b>N</b> | <b>O</b>  | <b>P</b>   |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|------------|
| HLH-MWh - Surplus Deficit              | Oct       | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1      | Apr16     | May       | Jun       | Jul       | Aug1     | Aug16    | Sep       | Sum        |
| 1 1929 Federal Report Surplus Deficit  | 32,350    | 232,919   | -118,129  | -18,949   | 124,481   | 108,195   | -176,952  | -276,753  | 493,320   | 1,766,408 | 214,173   | 177,857  | 116,684  | 215,432   | 2,891,035  |
| 2 1930 Federal Report Surplus Deficit  | 84,565    | 308,599   | -103,056  | -438,885  | 101,048   | 93,306    | -24,801   | -144,713  | 613,160   | 960,896   | 877,206   | 245,674  | 153,795  | 186,843   | 2,913,639  |
| 3 1931 Federal Report Surplus Deficit  | 78,431    | 287,108   | -25,019   | -398,954  | 90,360    | 131,630   | -89,639   | -297,429  | 786,059   | 858,163   | 856,955   | 327,623  | 158,923  | 201,303   | 2,965,514  |
| 4 1932 Federal Report Surplus Deficit  | -55,864   | 117,778   | -64,534   | -86,395   | -653,477  | 942,214   | 630,659   | 961,237   | 2,591,227 | 2,077,484 | 1,532,089 | 406,698  | 375,989  | 401,622   | 9,176,726  |
| 5 1933 Federal Report Surplus Deficit  | 49,917    | 138,328   | 744,018   | 1,391,210 | 1,453,085 | 1,063,277 | 285,444   | 220,668   | 1,744,348 | 2,606,966 | 1,961,509 | 731,423  | 722,326  | 465,457   | 13,577,978 |
| 6 1934 Federal Report Surplus Deficit  | 393,555   | 1,442,580 | 1,821,986 | 2,169,506 | 2,040,883 | 1,992,566 | 1,032,891 | 944,822   | 1,869,361 | 1,517,214 | 546,346   | 176,401  | 203,080  | 79,781    | 16,230,973 |
| 7 1935 Federal Report Surplus Deficit  | 19,850    | -74,189   | 182,634   | 1,284,793 | 1,390,727 | 1,076,287 | -4,980    | 309,633   | 1,520,923 | 1,290,911 | 1,508,791 | 673,357  | 194,159  | 150,472   | 9,523,367  |
| 8 1936 Federal Report Surplus Deficit  | 2,895     | 226,609   | -138,156  | -362,438  | -49,612   | 190,398   | -31,523   | 713,483   | 2,664,061 | 1,870,206 | 1,168,286 | 169,438  | 109,999  | 33,722    | 6,567,369  |
| 9 1937 Federal Report Surplus Deficit  | 91,878    | 343,257   | -42,874   | -496,618  | -65,708   | -44,960   | -167,353  | -276,108  | 630,889   | 1,429,327 | 702,287   | 233,269  | 109,540  | 263,091   | 2,709,918  |
| 10 1938 Federal Report Surplus Deficit | 37,840    | 195,005   | 343,965   | 1,152,891 | 952,393   | 1,550,787 | 697,815   | 1,056,362 | 2,274,628 | 1,855,099 | 1,627,084 | 194,431  | 110,184  | 314,956   | 12,363,441 |
| 11 1939 Federal Report Surplus Deficit | 42,259    | 158,932   | -152,994  | 627,882   | 652,855   | 475,817   | 159,429   | 496,306   | 1,754,077 | 1,103,296 | 936,493   | 131,456  | 100,823  | 82,508    | 6,569,139  |
| 12 1940 Federal Report Surplus Deficit | 111,066   | 351,936   | 449,013   | 773,111   | 389,301   | 1,247,936 | 443,620   | 299,251   | 1,766,887 | 1,065,985 | 280,035   | 103,725  | 64,007   | 152,120   | 7,497,991  |
| 13 1941 Federal Report Surplus Deficit | -15,672   | 345,154   | 242,866   | 177,082   | 250,307   | 435,355   | -103,445  | -291,995  | 743,987   | 1,154,866 | 762,101   | 282,473  | 122,196  | 286,482   | 4,391,758  |
| 14 1942 Federal Report Surplus Deficit | -63,084   | 421,941   | 1,089,579 | 1,119,491 | 989,184   | 124,577   | -85,891   | 207,778   | 1,210,365 | 2,030,126 | 1,818,672 | 456,402  | 372,109  | 481,669   | 10,172,917 |
| 15 1943 Federal Report Surplus Deficit | 75,057    | 67,309    | 137,316   | 1,501,657 | 1,296,363 | 1,392,295 | 1,298,421 | 1,281,786 | 2,025,765 | 2,682,752 | 2,233,227 | 510,824  | 308,229  | 233,847   | 15,044,847 |
| 16 1944 Federal Report Surplus Deficit | 21,383    | 242,131   | -127,683  | 229,772   | 155,783   | -342      | -274,904  | -360,429  | 346,341   | 864,034   | 417,584   | 246,817  | 50,392   | 143,239   | 1,954,118  |
| 17 1945 Federal Report Surplus Deficit | -31,399   | 225,793   | -44,802   | -218,065  | -100,481  | 48,460    | -185,130  | -293,424  | 1,648,964 | 2,078,588 | 452,879   | 215,770  | 104,414  | 144,433   | 4,046,000  |
| 18 1946 Federal Report Surplus Deficit | -5,976    | 271,749   | 383,294   | 922,024   | 1,022,017 | 1,032,224 | 910,692   | 1,121,579 | 2,113,242 | 1,746,015 | 1,772,273 | 649,211  | 475,256  | 383,108   | 12,796,709 |
| 19 1947 Federal Report Surplus Deficit | -23,463   | 482,913   | 1,602,572 | 1,749,746 | 1,874,746 | 1,654,662 | 610,685   | 457,235   | 2,483,258 | 1,808,995 | 1,664,582 | 398,740  | 254,503  | 349,184   | 15,368,360 |
| 20 1948 Federal Report Surplus Deficit | 1,287,836 | 1,099,885 | 993,961   | 1,921,237 | 1,568,249 | 1,046,328 | 429,209   | 778,529   | 2,644,461 | 2,509,669 | 1,898,858 | 763,596  | 750,078  | 573,904   | 18,265,799 |
| 21 1949 Federal Report Surplus Deficit | 213,014   | 370,175   | 338,058   | 886,664   | 922,862   | 1,601,065 | 644,775   | 875,758   | 2,740,626 | 1,700,128 | 590,330   | 65,683   | -10,716  | 89,022    | 11,027,444 |
| 22 1950 Federal Report Surplus Deficit | -2,519    | 179,531   | 472,133   | 1,665,475 | 1,700,138 | 1,959,592 | 927,421   | 642,270   | 2,043,682 | 2,515,399 | 2,192,627 | 775,807  | 693,711  | 504,411   | 16,269,678 |
| 23 1951 Federal Report Surplus Deficit | 539,447   | 1,241,840 | 1,566,902 | 2,117,251 | 2,370,818 | 2,178,884 | 983,092   | 827,982   | 2,348,469 | 1,795,700 | 1,920,848 | 682,514  | 292,614  | 379,498   | 19,245,858 |
| 24 1952 Federal Report Surplus Deficit | 1,001,126 | 773,748   | 1,053,497 | 1,633,021 | 1,686,248 | 1,089,850 | 951,333   | 1,250,820 | 2,710,040 | 2,105,530 | 1,678,117 | 456,971  | 185,347  | 46,981    | 16,622,629 |
| 25 1953 Federal Report Surplus Deficit | 41,210    | 218,656   | -97,630   | 447,776   | 1,975,367 | 668,696   | -211,145  | 39,966    | 1,877,064 | 2,694,203 | 2,107,815 | 514,399  | 395,877  | 401,650   | 11,073,904 |
| 26 1954 Federal Report Surplus Deficit | 167,673   | 508,406   | 715,188   | 1,534,855 | 1,893,687 | 1,353,958 | 429,816   | 425,353   | 2,268,517 | 2,115,575 | 2,066,841 | 843,295  | 894,109  | 1,214,905 | 16,432,179 |
| 27 1955 Federal Report Surplus Deficit | 246,726   | 847,291   | 716,910   | 456,058   | 640,928   | -115,942  | -53,039   | -179,990  | 1,735,314 | 2,530,350 | 2,124,636 | 759,804  | 498,623  | 335,473   | 10,543,142 |
| 28 1956 Federal Report Surplus Deficit | 330,569   | 1,046,977 | 1,600,955 | 2,186,223 | 2,193,363 | 2,103,058 | 858,293   | 1,196,047 | 2,594,453 | 2,362,961 | 1,890,663 | 698,838  | 631,748  | 417,194   | 20,111,341 |
| 29 1957 Federal Report Surplus Deficit | 297,407   | 343,367   | 806,564   | 1,147,708 | 565,587   | 1,335,740 | 794,239   | 514,196   | 2,876,525 | 2,499,188 | 1,264,161 | 490,193  | 154,221  | 180,714   | 13,269,810 |
| 30 1958 Federal Report Surplus Deficit | 27,794    | 260,258   | 295,796   | 1,379,635 | 1,335,767 | 1,025,087 | 285,595   | 636,650   | 2,830,328 | 2,268,941 | 1,119,082 | 435,623  | 186,832  | 235,974   | 12,323,363 |
| 31 1959 Federal Report Surplus Deficit | 165,951   | 777,263   | 1,450,981 | 2,087,824 | 2,110,308 | 1,365,217 | 736,048   | 479,454   | 1,953,298 | 2,271,468 | 2,070,793 | 733,479  | 746,317  | 1,468,013 | 18,416,414 |

**Table 10.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B         | C         | D         | E         | F         | G         | H         | I         | J         | K         | L         | M       | N         | O         | P          |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|-----------|-----------|------------|
| HLH-MWh - Surplus Deficit              | Oct       | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1      | Apr16     | May       | Jun       | Jul       | Aug1    | Aug16     | Sep       | Sum        |
| 32 1960 Federal Report Surplus Deficit | 1,637,533 | 1,489,501 | 1,296,743 | 1,528,881 | 1,311,355 | 1,196,436 | 1,068,690 | 792,285   | 1,727,482 | 2,077,457 | 1,500,774 | 622,206 | 168,655   | 270,677   | 16,688,675 |
| 33 1961 Federal Report Surplus Deficit | 139,849   | 479,875   | 427,135   | 1,278,301 | 1,511,828 | 1,730,088 | 674,241   | 304,626   | 2,083,313 | 2,180,831 | 1,266,995 | 448,947 | 272,606   | 171,498   | 12,970,132 |
| 34 1962 Federal Report Surplus Deficit | -3,591    | 285,048   | 434,783   | 1,409,668 | 1,382,197 | 371,604   | 360,398   | 1,021,483 | 1,933,842 | 1,858,320 | 1,165,994 | 532,252 | 339,077   | 225,818   | 11,316,894 |
| 35 1963 Federal Report Surplus Deficit | 413,969   | 852,617   | 1,301,581 | 1,455,809 | 1,389,831 | 439,036   | 58,825    | -72,620   | 1,812,045 | 2,148,563 | 1,506,311 | 449,699 | 219,543   | 459,397   | 12,434,605 |
| 36 1964 Federal Report Surplus Deficit | -16,149   | 301,707   | 399,550   | 863,702   | 875,273   | 161,526   | 287,848   | 159,705   | 1,994,315 | 2,642,881 | 2,207,062 | 739,514 | 700,341   | 735,034   | 12,052,308 |
| 37 1965 Federal Report Surplus Deficit | 530,058   | 708,145   | 1,674,729 | 2,269,794 | 2,521,337 | 2,109,144 | 351,412   | 1,157,557 | 2,297,643 | 2,467,241 | 1,759,310 | 736,978 | 651,461   | 246,778   | 19,481,588 |
| 38 1966 Federal Report Surplus Deficit | 239,260   | 402,210   | 547,810   | 1,325,533 | 1,197,274 | 508,266   | 441,810   | 329,407   | 1,583,918 | 1,637,598 | 1,448,041 | 475,577 | 187,790   | 235,076   | 10,559,572 |
| 39 1967 Federal Report Surplus Deficit | -19,101   | 183,356   | 802,161   | 1,701,643 | 1,866,839 | 1,512,890 | 359,494   | -38,858   | 1,878,087 | 2,413,743 | 1,915,451 | 628,641 | 516,946   | 446,933   | 14,168,224 |
| 40 1968 Federal Report Surplus Deficit | 186,569   | 552,995   | 568,572   | 1,413,738 | 1,646,618 | 1,584,057 | -133,340  | -163,001  | 1,532,547 | 2,142,333 | 1,583,753 | 640,807 | 618,717   | 934,503   | 13,108,867 |
| 41 1969 Federal Report Surplus Deficit | 578,364   | 1,108,429 | 1,052,631 | 2,123,229 | 2,039,663 | 1,565,053 | 925,456   | 996,393   | 2,618,373 | 2,006,817 | 1,633,969 | 416,652 | 135,163   | 277,012   | 17,477,204 |
| 42 1970 Federal Report Surplus Deficit | 230,655   | 399,411   | 189,028   | 1,437,766 | 1,462,685 | 666,889   | -81,838   | -151,752  | 1,908,937 | 2,731,865 | 1,114,866 | 262,625 | 140,847   | 87,309    | 10,399,295 |
| 43 1971 Federal Report Surplus Deficit | 30,080    | 272,953   | 462,414   | 2,142,471 | 2,336,691 | 2,200,625 | 879,422   | 748,319   | 2,671,142 | 2,580,691 | 2,120,542 | 787,634 | 780,388   | 519,493   | 18,532,867 |
| 44 1972 Federal Report Surplus Deficit | 281,539   | 431,572   | 724,105   | 2,057,222 | 2,085,593 | 2,672,866 | 1,148,609 | 626,167   | 2,441,462 | 2,382,268 | 2,092,013 | 799,364 | 820,901   | 598,659   | 19,162,340 |
| 45 1973 Federal Report Surplus Deficit | 244,551   | 448,844   | 538,939   | 1,276,977 | 1,177,814 | 360,177   | -313,874  | -363,408  | 632,959   | 1,135,656 | 625,214   | 248,382 | 53,047    | 130,265   | 6,195,543  |
| 46 1974 Federal Report Surplus Deficit | -4,901    | 151,313   | 1,123,339 | 2,396,491 | 2,346,114 | 2,382,937 | 1,063,525 | 1,116,654 | 2,215,310 | 2,523,090 | 2,250,147 | 819,199 | 822,423   | 563,528   | 19,769,167 |
| 47 1975 Federal Report Surplus Deficit | -54,933   | 217,619   | 237,814   | 1,316,094 | 1,307,753 | 1,524,234 | 83,745    | 171,055   | 2,107,701 | 2,692,285 | 2,306,936 | 624,836 | 531,227   | 629,745   | 13,696,112 |
| 48 1976 Federal Report Surplus Deficit | 617,531   | 1,242,162 | 1,819,708 | 2,136,327 | 2,130,816 | 1,893,027 | 1,014,281 | 761,008   | 2,711,667 | 2,156,633 | 2,066,832 | 896,143 | 1,003,679 | 1,440,934 | 21,890,749 |
| 49 1977 Federal Report Surplus Deficit | 288,113   | 235,281   | -38,937   | 402,424   | 240,450   | -122,813  | -289,784  | -318,051  | 471,884   | 694,400   | 413,425   | 257,495 | 92,052    | -81,736   | 2,244,200  |
| 50 1978 Federal Report Surplus Deficit | -186,043  | 217,362   | 523,147   | 1,029,246 | 943,585   | 924,305   | 868,988   | 436,441   | 2,018,389 | 1,626,681 | 1,744,729 | 494,960 | 329,123   | 897,557   | 11,868,468 |
| 51 1979 Federal Report Surplus Deficit | 325,706   | 423,540   | 34,767    | 785,282   | 409,014   | 1,003,634 | -9,135    | 234,106   | 2,270,610 | 1,304,620 | 446,071   | 146,480 | 33,628    | 217,412   | 7,625,736  |
| 52 1980 Federal Report Surplus Deficit | 50,987    | 238,104   | -173,248  | 817,351   | 54,229    | 238,740   | 329,591   | 623,673   | 2,533,517 | 2,192,710 | 1,215,037 | 195,097 | 94,383    | 306,558   | 8,716,729  |
| 53 1981 Federal Report Surplus Deficit | 25,504    | 445,886   | 1,268,698 | 1,705,420 | 1,780,445 | 567,273   | -219,938  | -36,381   | 1,987,754 | 2,419,740 | 1,822,996 | 727,312 | 735,807   | 447,355   | 13,677,873 |
| 54 1982 Federal Report Surplus Deficit | 114,270   | 611,272   | 551,707   | 1,614,029 | 2,295,108 | 2,749,565 | 862,452   | 479,299   | 2,471,616 | 2,663,573 | 2,331,409 | 780,557 | 808,019   | 936,962   | 19,269,838 |
| 55 1983 Federal Report Surplus Deficit | 577,672   | 615,138   | 840,398   | 1,765,997 | 1,914,145 | 2,059,029 | 629,747   | 395,809   | 2,322,574 | 2,291,178 | 2,113,599 | 765,818 | 753,666   | 607,138   | 17,651,909 |
| 56 1984 Federal Report Surplus Deficit | 179,963   | 1,360,353 | 1,002,785 | 1,781,241 | 1,639,270 | 1,749,698 | 541,995   | 932,867   | 2,379,238 | 2,733,002 | 2,119,488 | 692,115 | 351,411   | 584,622   | 18,048,051 |
| 57 1985 Federal Report Surplus Deficit | 206,831   | 560,902   | 505,560   | 922,218   | 861,221   | 482,612   | 488,798   | 615,475   | 1,991,636 | 1,251,521 | 626,791   | 53,570  | -18,253   | 189,433   | 8,738,315  |
| 58 1986 Federal Report Surplus Deficit | 351,235   | 826,179   | 615,529   | 1,396,236 | 1,728,876 | 2,324,080 | 1,000,015 | 862,321   | 1,933,024 | 2,025,346 | 1,024,863 | 315,992 | 116,498   | 124,998   | 14,645,191 |
| 59 1987 Federal Report Surplus Deficit | -54,501   | 492,118   | 546,860   | 653,928   | 262,149   | 795,882   | 13,147    | 162,519   | 1,810,615 | 1,087,128 | 346,661   | 126,492 | 28,675    | 99,797    | 6,371,472  |
| 60 1988 Federal Report Surplus Deficit | -4,078    | 190,863   | -224,495  | -319,960  | 17,610    | 109,862   | -165,247  | 83,250    | 810,777   | 1,230,148 | 1,055,369 | 251,655 | 137,909   | 187,249   | 3,360,913  |
| 61 1989 Federal Report Surplus Deficit | 16,578    | 289,186   | 268,611   | 82,612    | -325,870  | 792,591   | 381,091   | 952,074   | 1,898,056 | 1,368,105 | 792,740   | 141,745 | 85,383    | 186,582   | 6,929,485  |
| 62 1990 Federal Report Surplus Deficit | 72,057    | 429,864   | 818,871   | 1,350,138 | 1,540,474 | 1,251,774 | 458,711   | 847,764   | 1,660,615 | 1,906,211 | 1,517,934 | 579,002 | 473,152   | 193,735   | 13,100,303 |



**Table 10.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| <b>A</b>                               | <b>B</b>  | <b>C</b>  | <b>D</b>  | <b>E</b>  | <b>F</b>  | <b>G</b>  | <b>H</b>  | <b>I</b>  | <b>J</b>  | <b>K</b>  | <b>L</b>  | <b>M</b> | <b>N</b> | <b>O</b> | <b>P</b>   |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|------------|
| HLH-MWh - Surplus Deficit              | Oct       | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1      | Apr16     | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 63 1991 Federal Report Surplus Deficit | -11,800   | 1,318,414 | 1,119,619 | 1,659,705 | 1,693,531 | 1,400,186 | 462,561   | 331,223   | 1,897,902 | 1,901,591 | 1,956,360 | 733,897  | 593,856  | 235,683  | 15,292,727 |
| 64 1992 Federal Report Surplus Deficit | -29,300   | 291,969   | -216,817  | 349,544   | 368,049   | 401,446   | -177,260  | -120,654  | 1,554,280 | 1,029,851 | 323,181   | 153,186  | 73,222   | 34,376   | 4,035,074  |
| 65 1993 Federal Report Surplus Deficit | 7,154     | 287,946   | 40,954    | -96,306   | -414,082  | 519,755   | 67,852    | -178,879  | 2,552,333 | 1,953,069 | 1,066,422 | 211,135  | 118,589  | 189,210  | 6,325,153  |
| 66 1994 Federal Report Surplus Deficit | 77,587    | 381,381   | 75,460    | -82,919   | 270,054   | 95,355    | -150,820  | 261,608   | 1,435,567 | 1,072,480 | 907,113   | 200,931  | 91,460   | 159,557  | 4,794,816  |
| 67 1995 Federal Report Surplus Deficit | 32,280    | 116,943   | 35,680    | 667,047   | 1,002,282 | 1,436,317 | 191,715   | -148,469  | 2,087,681 | 2,285,387 | 1,536,675 | 390,617  | 187,054  | 433,963  | 10,255,172 |
| 68 1996 Federal Report Surplus Deficit | 572,328   | 1,574,258 | 2,029,601 | 2,320,398 | 2,428,231 | 2,631,532 | 928,821   | 1,198,833 | 2,415,691 | 2,565,099 | 2,010,187 | 720,725  | 646,349  | 430,259  | 22,472,312 |
| 69 1997 Federal Report Surplus Deficit | 147,271   | 520,793   | 1,082,580 | 2,301,322 | 2,373,667 | 2,569,764 | 950,680   | 1,226,172 | 2,542,237 | 2,454,094 | 2,149,397 | 760,801  | 806,080  | 908,601  | 20,793,458 |
| 70 1998 Federal Report Surplus Deficit | 1,403,242 | 1,052,910 | 502,471   | 1,023,597 | 1,494,769 | 893,651   | 34,793    | 5,679     | 2,896,486 | 2,547,761 | 1,711,465 | 659,258  | 503,484  | 180,866  | 14,910,433 |
| 71 1999 Federal Report Surplus Deficit | 44,059    | 146,654   | 968,533   | 1,947,831 | 2,031,931 | 2,253,077 | 543,135   | 685,002   | 2,187,099 | 2,512,936 | 2,090,750 | 862,116  | 856,804  | 449,582  | 17,579,509 |
| 72 2000 Federal Report Surplus Deficit | 121,770   | 1,421,265 | 1,278,361 | 1,360,564 | 1,354,033 | 1,287,159 | 789,302   | 997,630   | 1,933,898 | 1,079,683 | 1,435,584 | 524,498  | 100,541  | 162,439  | 13,846,727 |
| 73 2001 Federal Report Surplus Deficit | 63,354    | 209,736   | -73,165   | 212,129   | 140,227   | 149,274   | -266,004  | -324,060  | 648,034   | 582,373   | 544,004   | 267,046  | 61,740   | -80,211  | 2,134,478  |
| 74 2002 Federal Report Surplus Deficit | -249,676  | 189,005   | 235,876   | -3,088    | 203,434   | 312,481   | 314,212   | 760,312   | 1,681,360 | 2,233,994 | 1,816,865 | 322,584  | 229,258  | 231,620  | 8,278,236  |
| 75 2003 Federal Report Surplus Deficit | 100,283   | 345,519   | -43,202   | 115,821   | 544,750   | 1,256,868 | 246,339   | 289,983   | 1,248,181 | 2,086,450 | 862,961   | 29,633   | 26,932   | -44,289  | 7,066,228  |
| 76 2004 Federal Report Surplus Deficit | 29,070    | 522,416   | 507,934   | 347,135   | 31,749    | 424,003   | 196,671   | 182,209   | 1,474,828 | 1,620,884 | 842,682   | 79,897   | 129,155  | 551,630  | 6,940,262  |
| 77 2005 Federal Report Surplus Deficit | 312,612   | 440,934   | 707,773   | 1,160,139 | 1,287,075 | 470,336   | -217,254  | -149,638  | 1,470,654 | 1,372,756 | 1,071,630 | 233,763  | 101,487  | 35,803   | 8,298,072  |
| 78 2006 Federal Report Surplus Deficit | 61,146    | 508,710   | 496,857   | 1,565,663 | 1,759,704 | 1,169,672 | 1,009,577 | 949,988   | 2,760,073 | 2,207,501 | 1,337,523 | 244,487  | 84,063   | -100,115 | 14,054,848 |
| 79 2007 Federal Report Surplus Deficit | -12,738   | 486,673   | 550,806   | 1,370,983 | 1,007,404 | 1,796,369 | 563,691   | 261,626   | 2,024,125 | 1,557,349 | 1,411,243 | 145,972  | 6,050    | -207,478 | 10,962,075 |
| 80 2008 Federal Report Surplus Deficit | 95,868    | 439,188   | 149,634   | 424,081   | 481,666   | 481,162   | 46,100    | -100,053  | 2,371,642 | 2,573,586 | 1,895,428 | 344,693  | 353,516  | 225,822  | 9,782,333  |

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**Table 10.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| <b>A</b>                               | <b>B</b>  | <b>C</b>  | <b>D</b>  | <b>E</b>  | <b>F</b>  | <b>G</b>  | <b>H</b>  | <b>I</b>  | <b>J</b>  | <b>K</b>  | <b>L</b>  | <b>M</b> | <b>N</b> | <b>O</b>  | <b>P</b>   |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|------------|
| HLH-MWh - Surplus Deficit              | Oct       | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1      | Apr16     | May       | Jun       | Jul       | Aug1     | Aug16    | Sep       | Sum        |
| 1 1929 Federal Report Surplus Deficit  | 122,808   | 318,158   | -136,899  | 54,596    | 101,173   | 102,032   | -145,077  | -224,379  | 287,996   | 1,528,530 | 143,879   | 249,315  | 53,109   | 213,013   | 2,668,255  |
| 2 1930 Federal Report Surplus Deficit  | 167,386   | 390,201   | -115,661  | -365,443  | 84,759    | 89,540    | 23,277    | -67,859   | 423,497   | 633,344   | 801,641   | 309,056  | 81,926   | 184,562   | 2,640,226  |
| 3 1931 Federal Report Surplus Deficit  | 160,571   | 359,564   | -55,421   | -321,043  | 64,108    | 127,426   | -42,591   | -246,445  | 591,230   | 506,129   | 778,111   | 394,713  | 89,895   | 200,039   | 2,606,285  |
| 4 1932 Federal Report Surplus Deficit  | 29,516    | 197,555   | -88,948   | -2,464    | -661,364  | 889,903   | 676,644   | 1,081,789 | 2,694,961 | 1,931,816 | 1,518,433 | 476,238  | 302,641  | 409,273   | 9,455,995  |
| 5 1933 Federal Report Surplus Deficit  | 133,299   | 221,508   | 415,500   | 1,119,209 | 1,409,388 | 1,075,413 | 353,661   | 314,698   | 1,775,933 | 2,525,104 | 1,987,356 | 881,839  | 694,275  | 476,925   | 13,384,110 |
| 6 1934 Federal Report Surplus Deficit  | 473,312   | 870,125   | 1,086,470 | 1,867,030 | 1,995,139 | 1,976,606 | 1,076,046 | 1,049,347 | 1,958,031 | 1,395,974 | 472,115   | 240,382  | 127,491  | 75,345    | 14,663,413 |
| 7 1935 Federal Report Surplus Deficit  | 101,016   | 15,164    | 166,874   | 1,022,339 | 1,353,831 | 1,192,705 | 45,236    | 424,273   | 1,514,185 | 983,703   | 1,559,859 | 812,855  | 120,174  | 145,020   | 9,457,234  |
| 8 1936 Federal Report Surplus Deficit  | 88,128    | 315,011   | -161,172  | -287,653  | -71,797   | 189,956   | 16,552    | 786,614   | 2,793,952 | 1,681,940 | 1,119,303 | 234,924  | 39,711   | 29,527    | 6,774,995  |
| 9 1937 Federal Report Surplus Deficit  | 173,356   | 416,452   | -65,913   | -423,540  | -91,938   | -49,249   | -129,943  | -222,840  | 414,855   | 1,219,327 | 625,891   | 302,120  | 45,540   | 260,780   | 2,474,896  |
| 10 1938 Federal Report Surplus Deficit | 121,779   | 271,871   | 320,013   | 1,104,744 | 892,919   | 1,526,658 | 733,844   | 1,128,927 | 2,379,590 | 1,556,474 | 1,674,373 | 258,368  | 33,345   | 318,081   | 12,320,987 |
| 11 1939 Federal Report Surplus Deficit | 129,994   | 243,316   | -162,437  | 696,188   | 592,876   | 481,711   | 204,246   | 604,154   | 1,634,376 | 846,142   | 868,154   | 198,553  | 30,229   | 76,955    | 6,444,457  |
| 12 1940 Federal Report Surplus Deficit | 193,539   | 425,472   | 367,083   | 825,402   | 358,526   | 1,192,835 | 489,366   | 412,185   | 1,738,386 | 863,005   | 199,366   | 164,854  | -7,246   | 149,841   | 7,372,616  |
| 13 1941 Federal Report Surplus Deficit | 69,660    | 420,274   | 217,962   | 253,037   | 225,875   | 445,062   | -58,966   | -243,343  | 546,123   | 885,012   | 685,104   | 344,712  | 53,779   | 292,297   | 4,136,587  |
| 14 1942 Federal Report Surplus Deficit | 23,339    | 486,871   | 701,870   | 1,155,405 | 927,564   | 121,671   | -31,990   | 319,492   | 1,024,644 | 1,904,113 | 1,873,543 | 536,127  | 304,560  | 494,487   | 9,841,697  |
| 15 1943 Federal Report Surplus Deficit | 159,400   | 152,031   | 101,786   | 1,446,189 | 1,184,304 | 1,366,855 | 1,303,905 | 1,322,521 | 2,021,411 | 2,486,873 | 2,230,898 | 590,849  | 240,052  | 236,490   | 14,843,564 |
| 16 1944 Federal Report Surplus Deficit | 112,004   | 325,983   | -141,192  | 305,565   | 121,706   | -6,166    | -225,425  | -318,635  | 105,002   | 553,005   | 341,920   | 306,104  | -21,482  | 137,140   | 1,595,529  |
| 17 1945 Federal Report Surplus Deficit | 55,910    | 305,654   | -76,031   | -136,773  | -114,350  | 45,271    | -144,561  | -242,055  | 1,493,026 | 1,954,322 | 380,691   | 278,418  | 34,011   | 138,292   | 3,971,825  |
| 18 1946 Federal Report Surplus Deficit | 83,293    | 351,057   | 352,822   | 1,042,028 | 966,062   | 971,191   | 927,764   | 1,196,187 | 2,402,974 | 1,493,475 | 1,822,195 | 740,717  | 408,159  | 388,726   | 13,146,649 |
| 19 1947 Federal Report Surplus Deficit | 66,629    | 543,628   | 1,063,203 | 1,554,872 | 1,764,457 | 1,605,056 | 637,437   | 563,973   | 2,519,251 | 1,672,001 | 1,722,521 | 468,746  | 183,905  | 353,300   | 14,718,980 |
| 20 1948 Federal Report Surplus Deficit | 1,252,441 | 936,588   | 584,497   | 1,626,866 | 1,486,168 | 1,052,531 | 493,320   | 861,147   | 2,936,966 | 2,384,339 | 1,943,477 | 917,306  | 713,188  | 586,209   | 17,775,042 |
| 21 1949 Federal Report Surplus Deficit | 294,928   | 447,000   | 319,805   | 919,793   | 877,257   | 1,554,847 | 698,558   | 949,825   | 2,706,924 | 1,552,161 | 513,854   | 129,606  | -84,244  | 84,590    | 10,964,903 |
| 22 1950 Federal Report Surplus Deficit | 86,716    | 266,255   | 395,228   | 1,342,303 | 1,692,223 | 1,876,802 | 939,146   | 731,785   | 2,141,686 | 2,415,014 | 2,212,536 | 929,834  | 642,963  | 514,197   | 16,186,689 |
| 23 1951 Federal Report Surplus Deficit | 616,508   | 1,059,500 | 849,393   | 1,749,375 | 2,239,209 | 2,063,700 | 1,013,507 | 903,683   | 2,446,911 | 1,630,038 | 1,899,603 | 780,691  | 219,508  | 385,933   | 17,857,558 |
| 24 1952 Federal Report Surplus Deficit | 1,065,510 | 796,386   | 643,471   | 1,509,563 | 1,585,413 | 1,075,319 | 963,485   | 1,310,653 | 2,861,767 | 1,907,870 | 1,714,900 | 530,411  | 114,586  | 42,420    | 16,121,754 |
| 25 1953 Federal Report Surplus Deficit | 129,707   | 309,898   | -115,688  | 403,726   | 1,920,146 | 703,675   | -148,443  | 129,567   | 1,892,345 | 2,544,584 | 2,126,469 | 590,033  | 325,269  | 406,213   | 11,217,501 |
| 26 1954 Federal Report Surplus Deficit | 253,462   | 577,843   | 499,008   | 1,305,903 | 1,833,217 | 1,443,925 | 479,754   | 523,758   | 2,502,860 | 2,007,713 | 2,092,653 | 994,187  | 916,499  | 1,229,113 | 16,659,895 |
| 27 1955 Federal Report Surplus Deficit | 329,108   | 769,128   | 411,687   | 514,055   | 601,371   | -119,624  | -54,936   | -59,206   | 1,550,227 | 2,514,312 | 2,180,998 | 908,092  | 444,882  | 337,464   | 10,327,556 |
| 28 1956 Federal Report Surplus Deficit | 410,908   | 924,572   | 954,563   | 1,956,716 | 2,078,845 | 1,963,277 | 888,485   | 1,189,279 | 2,938,927 | 2,251,367 | 1,904,465 | 825,904  | 573,573  | 423,801   | 19,284,683 |
| 29 1957 Federal Report Surplus Deficit | 378,449   | 421,225   | 562,121   | 1,011,850 | 538,197   | 1,254,748 | 887,618   | 617,379   | 3,047,376 | 2,433,146 | 1,203,596 | 563,070  | 81,775   | 177,094   | 13,177,643 |
| 30 1958 Federal Report Surplus Deficit | 116,236   | 336,951   | 260,333   | 1,161,411 | 1,235,329 | 1,027,123 | 330,832   | 742,500   | 2,954,228 | 2,143,769 | 1,051,311 | 503,773  | 113,510  | 234,490   | 12,211,794 |
| 31 1959 Federal Report Surplus Deficit | 248,425   | 801,770   | 861,963   | 1,829,676 | 2,050,848 | 1,298,693 | 755,748   | 569,000   | 2,135,387 | 2,189,354 | 2,029,524 | 888,596  | 719,175  | 1,538,878 | 17,917,038 |

**Table 10.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| <b>A</b>                               | <b>B</b>  | <b>C</b>  | <b>D</b>  | <b>E</b>  | <b>F</b>  | <b>G</b>  | <b>H</b>  | <b>I</b>  | <b>J</b>  | <b>K</b>  | <b>L</b>  | <b>M</b>  | <b>N</b>  | <b>O</b>  | <b>P</b>   |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| HLH-MWh - Surplus Deficit              | Oct       | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1      | Apr16     | May       | Jun       | Jul       | Aug1      | Aug16     | Sep       | Sum        |
| 32 1960 Federal Report Surplus Deficit | 1,484,123 | 989,396   | 684,163   | 1,294,775 | 1,216,354 | 1,191,222 | 1,100,609 | 865,349   | 1,699,686 | 1,901,691 | 1,535,174 | 705,068   | 97,727    | 271,316   | 15,036,654 |
| 33 1961 Federal Report Surplus Deficit | 221,059   | 543,243   | 365,024   | 1,026,102 | 1,419,630 | 1,775,737 | 726,899   | 394,150   | 2,209,462 | 2,025,582 | 1,223,603 | 515,906   | 197,417   | 165,116   | 12,808,931 |
| 34 1962 Federal Report Surplus Deficit | 83,205    | 358,589   | 380,982   | 1,114,805 | 1,300,420 | 374,122   | 389,904   | 1,114,797 | 1,975,173 | 1,641,466 | 1,103,796 | 608,396   | 265,640   | 221,637   | 10,932,934 |
| 35 1963 Federal Report Surplus Deficit | 489,134   | 831,743   | 727,586   | 1,155,105 | 1,282,458 | 454,014   | 113,021   | 12,482    | 1,667,052 | 2,042,339 | 1,463,964 | 518,097   | 147,679   | 466,600   | 11,371,274 |
| 36 1964 Federal Report Surplus Deficit | 73,159    | 377,656   | 351,827   | 920,140   | 813,927   | 158,087   | 342,904   | 260,442   | 2,032,618 | 2,475,464 | 2,194,982 | 887,719   | 647,729   | 753,956   | 12,290,611 |
| 37 1965 Federal Report Surplus Deficit | 604,853   | 725,064   | 1,137,579 | 2,105,666 | 2,377,374 | 1,994,201 | 352,250   | 1,211,477 | 2,640,293 | 2,152,475 | 1,716,994 | 882,852   | 591,091   | 250,184   | 18,742,353 |
| 38 1966 Federal Report Surplus Deficit | 321,026   | 477,521   | 427,594   | 1,123,142 | 1,127,253 | 455,249   | 538,293   | 438,571   | 1,491,296 | 1,431,837 | 1,457,743 | 549,617   | 115,624   | 232,179   | 10,186,946 |
| 39 1967 Federal Report Surplus Deficit | 66,553    | 265,554   | 500,752   | 1,467,879 | 1,828,868 | 1,477,232 | 386,861   | 39,296    | 1,907,132 | 2,282,426 | 1,909,771 | 705,834   | 454,595   | 454,774   | 13,747,526 |
| 40 1968 Federal Report Surplus Deficit | 270,213   | 620,351   | 471,248   | 1,139,129 | 1,545,513 | 1,621,567 | -88,877   | -114,437  | 1,418,563 | 1,969,333 | 1,613,793 | 743,584   | 564,847   | 955,373   | 12,730,200 |
| 41 1969 Federal Report Surplus Deficit | 648,671   | 945,637   | 605,971   | 1,902,170 | 1,979,511 | 1,486,048 | 982,204   | 1,068,470 | 2,864,075 | 1,964,387 | 1,697,819 | 482,248   | 65,590    | 270,689   | 16,963,490 |
| 42 1970 Federal Report Surplus Deficit | 312,041   | 475,162   | 162,221   | 1,347,399 | 1,389,347 | 726,229   | -46,319   | -85,019   | 1,825,751 | 2,524,128 | 1,039,515 | 327,066   | 72,259    | 83,183    | 10,152,961 |
| 43 1971 Federal Report Surplus Deficit | 113,595   | 344,678   | 408,579   | 1,890,668 | 2,199,717 | 2,110,577 | 899,131   | 831,799   | 3,036,230 | 2,500,913 | 2,132,887 | 942,357   | 755,758   | 526,847   | 18,693,736 |
| 44 1972 Federal Report Surplus Deficit | 358,382   | 497,289   | 593,451   | 1,641,513 | 1,976,393 | 2,591,599 | 1,217,214 | 730,718   | 2,784,838 | 2,323,890 | 2,044,325 | 951,867   | 830,102   | 609,592   | 19,151,172 |
| 45 1973 Federal Report Surplus Deficit | 326,930   | 520,192   | 480,245   | 1,186,497 | 1,106,150 | 361,389   | -278,954  | -329,936  | 450,618   | 868,222   | 542,742   | 317,370   | -11,673   | 127,772   | 5,667,565  |
| 46 1974 Federal Report Surplus Deficit | 80,567    | 226,493   | 746,890   | 2,006,619 | 2,216,391 | 2,279,960 | 1,093,253 | 1,186,180 | 2,545,251 | 2,504,575 | 2,225,552 | 970,486   | 824,708   | 574,795   | 19,481,719 |
| 47 1975 Federal Report Surplus Deficit | 31,215    | 298,938   | 213,949   | 1,116,589 | 1,230,428 | 1,528,124 | 138,093   | 284,145   | 2,219,407 | 2,491,408 | 2,333,078 | 709,755   | 475,317   | 648,278   | 13,718,726 |
| 48 1976 Federal Report Surplus Deficit | 676,654   | 970,733   | 1,140,248 | 1,854,654 | 2,049,851 | 1,807,503 | 1,017,374 | 863,719   | 2,886,094 | 2,011,114 | 2,060,090 | 1,060,303 | 1,034,663 | 1,469,282 | 20,902,280 |
| 49 1977 Federal Report Surplus Deficit | 366,380   | 312,937   | -71,109   | 477,909   | 206,145   | -126,819  | -252,268  | -287,178  | 274,018   | 310,023   | 327,587   | 321,276   | 22,976    | -80,670   | 1,801,208  |
| 50 1978 Federal Report Surplus Deficit | -101,024  | 294,060   | 493,369   | 1,191,003 | 919,847   | 859,474   | 894,495   | 546,739   | 2,109,471 | 1,313,281 | 1,703,176 | 575,003   | 262,317   | 917,785   | 11,978,997 |
| 51 1979 Federal Report Surplus Deficit | 400,688   | 498,849   | 11,236    | 834,111   | 377,634   | 1,003,665 | 53,790    | 321,375   | 2,209,636 | 1,067,614 | 375,175   | 209,047   | -36,586   | 211,495   | 7,537,729  |
| 52 1980 Federal Report Surplus Deficit | 135,457   | 316,092   | -184,373  | 881,400   | 38,916    | 239,751   | 372,924   | 734,279   | 2,673,075 | 2,063,485 | 1,146,865 | 260,260   | 22,692    | 309,151   | 9,009,975  |
| 53 1981 Federal Report Surplus Deficit | 111,076   | 517,907   | 665,358   | 1,299,696 | 1,689,171 | 564,024   | -170,298  | 44,194    | 2,053,992 | 2,307,928 | 1,850,455 | 878,117   | 716,614   | 454,054   | 12,982,290 |
| 54 1982 Federal Report Surplus Deficit | 200,009   | 659,170   | 484,496   | 1,454,740 | 2,164,377 | 2,640,179 | 856,241   | 620,747   | 2,643,130 | 2,472,766 | 2,371,187 | 914,107   | 788,333   | 957,909   | 19,227,390 |
| 55 1983 Federal Report Surplus Deficit | 645,328   | 675,130   | 623,733   | 1,500,585 | 1,757,094 | 1,975,279 | 686,492   | 493,734   | 2,273,050 | 2,024,015 | 2,101,922 | 901,324   | 704,645   | 618,954   | 16,981,287 |
| 56 1984 Federal Report Surplus Deficit | 259,368   | 1,038,439 | 685,690   | 1,474,460 | 1,519,009 | 1,660,125 | 585,430   | 996,292   | 2,239,435 | 2,572,089 | 2,118,860 | 770,744   | 281,810   | 595,883   | 16,797,633 |
| 57 1985 Federal Report Surplus Deficit | 286,102   | 616,597   | 456,880   | 1,029,944 | 812,220   | 500,985   | 526,027   | 710,444   | 1,893,429 | 923,118   | 544,723   | 119,291   | -92,847   | 191,681   | 8,518,595  |
| 58 1986 Federal Report Surplus Deficit | 429,946   | 846,565   | 492,372   | 1,261,294 | 1,639,689 | 2,202,493 | 1,021,121 | 936,975   | 1,822,337 | 1,903,812 | 954,186   | 377,948   | 44,519    | 124,417   | 14,057,674 |
| 59 1987 Federal Report Surplus Deficit | 35,135    | 559,148   | 471,799   | 722,982   | 233,377   | 801,975   | 70,899    | 244,282   | 1,835,964 | 905,968   | 279,465   | 194,502   | -38,125   | 97,069    | 6,414,440  |
| 60 1988 Federal Report Surplus Deficit | 80,466    | 273,982   | -232,107  | -240,602  | -3,557    | 106,992   | -118,858  | 194,201   | 627,427   | 1,021,238 | 995,385   | 316,310   | 69,757    | 182,061   | 3,272,695  |
| 61 1989 Federal Report Surplus Deficit | 100,971   | 368,855   | 246,532   | 164,560   | -343,429  | 778,904   | 415,852   | 1,021,947 | 1,874,686 | 1,075,579 | 720,644   | 208,540   | 17,646    | 184,477   | 6,835,763  |
| 62 1990 Federal Report Surplus Deficit | 159,720   | 509,798   | 467,971   | 1,030,811 | 1,529,258 | 1,210,303 | 489,979   | 956,960   | 1,673,834 | 1,895,646 | 1,474,670 | 664,063   | 408,246   | 191,644   | 12,662,903 |

**Table 10.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B         | C         | D         | E         | F         | G         | H         | I         | J         | K         | L         | M         | N       | O        | P          |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|----------|------------|
| HLH-MWh - Surplus Deficit              | Oct       | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1      | Apr16     | May       | Jun       | Jul       | Aug1      | Aug16   | Sep      | Sum        |
| 63 1991 Federal Report Surplus Deficit | 76,354    | 920,470   | 578,896   | 1,283,492 | 1,626,266 | 1,372,124 | 494,174   | 417,380   | 1,924,842 | 1,808,754 | 1,924,753 | 884,180   | 539,583 | 245,573  | 14,096,842 |
| 64 1992 Federal Report Surplus Deficit | 60,553    | 376,349   | -230,700  | 428,623   | 330,023   | 400,255   | -132,479  | -57,633   | 1,545,917 | 753,497   | 247,849   | 222,706   | 7,535   | 34,009   | 3,986,503  |
| 65 1993 Federal Report Surplus Deficit | 88,854    | 361,884   | 9,307     | -15,541   | -430,190  | 519,368   | 126,738   | -128,954  | 2,511,983 | 1,633,883 | 979,000   | 278,823   | 54,057  | 188,531  | 6,177,743  |
| 66 1994 Federal Report Surplus Deficit | 165,850   | 454,428   | 46,975    | -6,176    | 238,304   | 94,351    | -103,277  | 363,901   | 1,246,969 | 846,575   | 836,081   | 267,689   | 24,648  | 156,835  | 4,633,154  |
| 67 1995 Federal Report Surplus Deficit | 116,435   | 198,137   | 12,184    | 769,902   | 907,818   | 1,440,487 | 240,209   | -56,504   | 1,885,883 | 2,113,891 | 1,466,289 | 464,304   | 117,755 | 445,095  | 10,121,885 |
| 68 1996 Federal Report Surplus Deficit | 646,776   | 1,026,375 | 1,381,822 | 1,991,468 | 2,297,937 | 2,516,965 | 945,694   | 1,267,285 | 2,546,329 | 2,254,442 | 1,987,738 | 868,421   | 593,370 | 435,660  | 20,760,281 |
| 69 1997 Federal Report Surplus Deficit | 233,342   | 587,485   | 694,460   | 2,141,950 | 2,241,403 | 2,468,391 | 984,506   | 1,288,239 | 2,834,938 | 2,348,365 | 2,111,302 | 848,699   | 773,244 | 927,810  | 20,484,133 |
| 70 1998 Federal Report Surplus Deficit | 1,341,759 | 902,802   | 436,563   | 1,102,002 | 1,408,439 | 893,329   | 93,425    | 99,002    | 3,000,535 | 2,395,552 | 1,651,781 | 743,221   | 437,148 | 181,596  | 14,687,154 |
| 71 1999 Federal Report Surplus Deficit | 133,514   | 225,481   | 614,104   | 1,727,384 | 1,869,102 | 2,218,760 | 603,397   | 766,437   | 2,210,709 | 2,342,373 | 2,182,993 | 1,006,030 | 884,123 | 460,399  | 17,244,806 |
| 72 2000 Federal Report Surplus Deficit | 207,008   | 818,445   | 675,832   | 1,121,027 | 1,268,600 | 1,276,187 | 806,862   | 1,086,017 | 1,967,831 | 782,465   | 1,486,318 | 602,509   | 25,148  | 155,348  | 12,279,598 |
| 73 2001 Federal Report Surplus Deficit | 151,274   | 288,934   | -102,093  | 299,322   | 95,008    | 144,610   | -228,169  | -284,296  | 443,651   | 190,824   | 464,756   | 330,896   | -7,652  | -77,270  | 1,709,797  |
| 74 2002 Federal Report Surplus Deficit | -161,047  | 270,272   | 210,448   | 70,349    | 183,005   | 319,392   | 349,009   | 853,046   | 1,655,169 | 2,177,236 | 1,854,087 | 387,860   | 157,478 | 230,847  | 8,557,150  |
| 75 2003 Federal Report Surplus Deficit | 182,957   | 420,954   | -70,118   | 188,235   | 506,023   | 1,260,876 | 304,039   | 387,211   | 1,058,052 | 1,971,255 | 789,543   | 90,603    | -43,343 | -41,820  | 7,004,467  |
| 76 2004 Federal Report Surplus Deficit | 113,999   | 575,337   | 401,919   | 419,589   | 14,047    | 442,454   | 264,843   | 275,974   | 1,311,099 | 1,394,337 | 773,674   | 157,267   | 71,151  | 566,301  | 6,781,991  |
| 77 2005 Federal Report Surplus Deficit | 390,952   | 511,867   | 418,963   | 951,954   | 1,213,695 | 482,585   | -187,200  | -104,298  | 1,337,203 | 1,176,205 | 1,004,027 | 302,909   | 38,710  | 38,167   | 7,575,739  |
| 78 2006 Federal Report Surplus Deficit | 147,571   | 574,491   | 432,435   | 1,357,107 | 1,671,409 | 1,155,986 | 1,026,367 | 1,017,851 | 2,729,255 | 2,127,679 | 1,290,431 | 305,518   | 7,740   | -97,293  | 13,746,548 |
| 79 2007 Federal Report Surplus Deficit | 75,107    | 553,362   | 471,725   | 1,110,369 | 946,529   | 1,797,073 | 614,765   | 374,244   | 2,067,615 | 1,357,333 | 1,408,440 | 209,604   | -68,192 | -203,358 | 10,714,616 |
| 80 2008 Federal Report Surplus Deficit | 181,202   | 508,464   | 122,710   | 510,853   | 435,656   | 514,837   | 91,176    | -18,865   | 2,274,512 | 2,546,551 | 1,940,721 | 418,363   | 287,396 | 224,875  | 10,038,450 |

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**Table 10.13**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B        | C        | D         | E         | F         | G         | H        | I         | J         | K         | L         | M        | N        | O        | P          |
|--|----------|----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|----------|----------|------------|
| LLH-MWh - Surplus Deficit              | Oct      | Nov      | Dec       | Jan       | Feb       | Mar       | Apr1     | Apr16     | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 1 1929 Federal Report Surplus Deficit  | -124,357 | -154,142 | -484,286  | -499,530  | -279,450  | -250,766  | -182,383 | -200,710  | -19,661   | 603,565   | -312,253  | -113,813 | -193,432 | -153,600 | -2,364,819 |
| 2 1930 Federal Report Surplus Deficit  | -126,459 | -129,677 | -490,294  | -659,074  | -244,352  | -269,369  | -93,726  | -121,413  | -38,161   | -49,432   | -250,161  | -107,505 | -188,688 | -184,937 | -2,953,248 |
| 3 1931 Federal Report Surplus Deficit  | -118,839 | -124,844 | -434,847  | -637,998  | -303,025  | -262,908  | -119,062 | -210,071  | 11,708    | -144,520  | -274,234  | -103,142 | -193,652 | -184,266 | -3,099,701 |
| 4 1932 Federal Report Surplus Deficit  | -164,859 | -216,783 | -460,229  | -497,553  | -555,593  | 270,362   | 201,498  | 617,732   | 1,648,303 | 1,350,672 | 73,446    | -60,669  | -170,448 | -86,138  | 1,949,742  |
| 5 1933 Federal Report Surplus Deficit  | -132,650 | -141,386 | -115,921  | 185,793   | 274,821   | 152,017   | 72,010   | -5,805    | 1,061,191 | 2,140,627 | 1,513,430 | 320,833  | 4,481    | -63,999  | 5,265,443  |
| 6 1934 Federal Report Surplus Deficit  | -34,159  | 446,164  | 1,200,481 | 1,549,530 | 1,469,133 | 822,836   | 600,789  | 718,130   | 1,528,302 | 1,191,405 | -325,256  | -130,720 | -222,891 | -247,215 | 8,566,530  |
| 7 1935 Federal Report Surplus Deficit  | -148,205 | -276,453 | -342,952  | 286,419   | 154,101   | 91,595    | -83,511  | 65,576    | 804,382   | 369,226   | 160,085   | 150,444  | -205,259 | -197,624 | 827,825    |
| 8 1936 Federal Report Surplus Deficit  | -144,257 | -176,757 | -480,385  | -618,021  | -359,410  | -175,118  | -77,848  | 279,475   | 1,768,320 | 1,258,217 | -120,505  | -126,610 | -203,912 | -232,625 | 590,564    |
| 9 1937 Federal Report Surplus Deficit  | -118,860 | -104,092 | -432,618  | -681,562  | -375,696  | -339,029  | -160,234 | -210,057  | 43,654    | 424,492   | -292,077  | -113,148 | -196,117 | -154,546 | -2,709,889 |
| 10 1938 Federal Report Surplus Deficit | -138,426 | -139,362 | -233,106  | -165,015  | 152,898   | 438,265   | 321,605  | 627,382   | 1,644,738 | 722,545   | 241,745   | -123,370 | -237,383 | -126,008 | 2,986,509  |
| 11 1939 Federal Report Surplus Deficit | -120,987 | -204,874 | -504,755  | -302,405  | -102,603  | -48,552   | -1,722   | 117,492   | 526,464   | 91,369    | -203,602  | -135,042 | -207,720 | -217,615 | -1,314,552 |
| 12 1940 Federal Report Surplus Deficit | -102,460 | -76,461  | -194,476  | -246,263  | -148,339  | 298,762   | 114,236  | 13,962    | 705,534   | 234,611   | -399,328  | -149,470 | -221,954 | -190,581 | -362,224   |
| 13 1941 Federal Report Surplus Deficit | -145,351 | -79,522  | -276,743  | -411,727  | -183,080  | -97,409   | -141,728 | -203,682  | -5,211    | 105,772   | -249,051  | -101,772 | -194,838 | -97,564  | -2,081,906 |
| 14 1942 Federal Report Surplus Deficit | -146,333 | -37,180  | 39,788    | -91,998   | 61,165    | -218,259  | -108,603 | -18,012   | 245,368   | 1,385,674 | 476,220   | 5,867    | -117,048 | 17,189   | 1,493,838  |
| 15 1943 Federal Report Surplus Deficit | -122,243 | -170,109 | -296,853  | 333,022   | 320,326   | 501,857   | 777,581  | 699,258   | 972,508   | 1,919,061 | 1,117,235 | 16,283   | -177,331 | -137,946 | 5,752,649  |
| 16 1944 Federal Report Surplus Deficit | -134,583 | -140,618 | -465,508  | -375,531  | -276,581  | -329,384  | -200,288 | -216,669  | -150,120  | 203       | -338,614  | -117,006 | -201,887 | -198,205 | -3,144,794 |
| 17 1945 Federal Report Surplus Deficit | -143,031 | -163,525 | -428,563  | -558,750  | -343,085  | -282,504  | -183,187 | -218,646  | 545,919   | 1,237,209 | -249,026  | -117,418 | -199,147 | -182,371 | -1,286,123 |
| 18 1946 Federal Report Surplus Deficit | -132,623 | -95,224  | -191,633  | -93,750   | 159,490   | 300,778   | 458,186  | 708,971   | 1,948,951 | 925,946   | 565,227   | 41,736   | -146,845 | -66,995  | 4,382,216  |
| 19 1947 Federal Report Surplus Deficit | -134,916 | 39,353   | 387,340   | 638,351   | 517,051   | 509,278   | 265,582  | 147,377   | 1,310,570 | 1,232,456 | 392,603   | -50,380  | -199,997 | -95,203  | 4,959,465  |
| 20 1948 Federal Report Surplus Deficit | 330,810  | 269,876  | -10,514   | 475,109   | 477,678   | 185,986   | 182,306  | 424,320   | 2,359,648 | 2,101,733 | 570,481   | 310,148  | 5,604    | 29,847   | 7,713,032  |
| 21 1949 Federal Report Surplus Deficit | -90,721  | -65,463  | -240,766  | -72,013   | 50,645    | 549,682   | 290,408  | 535,042   | 1,535,051 | 806,916   | -280,002  | -147,041 | -238,726 | -217,051 | 2,415,961  |
| 22 1950 Federal Report Surplus Deficit | -146,407 | -152,739 | -195,055  | 676,987   | 477,421   | 698,710   | 481,165  | 332,138   | 1,397,778 | 2,018,706 | 1,769,423 | 256,901  | -30,491  | -12,827  | 7,571,711  |
| 23 1951 Federal Report Surplus Deficit | 85,062   | 339,578  | 496,907   | 1,184,290 | 1,384,448 | 915,331   | 538,245  | 507,748   | 1,761,930 | 1,006,420 | 1,094,189 | 65,871   | -205,813 | -68,753  | 9,105,454  |
| 24 1952 Federal Report Surplus Deficit | 231,145  | 122,857  | 4,857     | 597,122   | 446,424   | 164,509   | 513,142  | 786,126   | 2,158,821 | 1,058,028 | 248,984   | -24,770  | -214,014 | -228,164 | 5,865,067  |
| 25 1953 Federal Report Surplus Deficit | -120,505 | -160,225 | -466,903  | -248,529  | 675,399   | 33,102    | -163,794 | -121,710  | 964,538   | 2,072,375 | 1,076,809 | -2,018   | -154,795 | -71,143  | 3,312,601  |
| 26 1954 Federal Report Surplus Deficit | -94,787  | 14,295   | -108,461  | 501,026   | 518,482   | 349,564   | 150,793  | 155,507   | 1,832,268 | 1,795,563 | 1,674,696 | 546,839  | 438,252  | 349,619  | 8,123,657  |
| 27 1955 Federal Report Surplus Deficit | -75,569  | 100,525  | -114,692  | -348,464  | -141,984  | -384,631  | -105,240 | -188,768  | 441,228   | 2,072,629 | 1,702,893 | 225,331  | -79,917  | -96,221  | 3,007,120  |
| 28 1956 Federal Report Surplus Deficit | -49,229  | 252,552  | 392,099   | 911,622   | 869,428   | 1,069,338 | 435,945  | 1,016,708 | 2,330,517 | 1,981,936 | 847,754   | 137,572  | -57,968  | -43,324  | 10,094,950 |
| 29 1957 Federal Report Surplus Deficit | -47,117  | -79,725  | -72,323   | -105,383  | -79,803   | 464,954   | 391,746  | 215,523   | 2,219,071 | 2,099,582 | -52,845   | -25,687  | -229,120 | -181,953 | 4,516,921  |
| 30 1958 Federal Report Surplus Deficit | -112,322 | -135,553 | -241,591  | 200,831   | 231,586   | 137,085   | 11,654   | 295,947   | 1,666,393 | 1,651,337 | -131,414  | -54,829  | -227,503 | -167,041 | 3,124,579  |
| 31 1959 Federal Report Surplus Deficit | -92,213  | 156,315  | 164,026   | 686,955   | 965,400   | 337,326   | 359,515  | 148,327   | 1,567,382 | 1,835,427 | 1,241,091 | 192,337  | -6,167   | 555,533  | 8,111,254  |

**Table 10.13**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B        | C        | D        | E         | F         | G         | H        | I        | J         | K         | L         | M        | N        | O        | P          |
|--|----------|----------|----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|----------|----------|------------|
| LLH-MWh - Surplus Deficit              | Oct      | Nov      | Dec      | Jan       | Feb       | Mar       | Apr1     | Apr16    | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 32 1960 Federal Report Surplus Deficit | 556,467  | 470,297  | 193,452  | 346,459   | 220,206   | 178,042   | 496,589  | 425,941  | 729,220   | 1,281,222 | 108,963   | 17,710   | -221,716 | -156,839 | 4,646,014  |
| 33 1961 Federal Report Surplus Deficit | -108,464 | 711      | -213,209 | 165,530   | 291,228   | 510,625   | 288,381  | 29,756   | 1,627,714 | 1,862,015 | -99,359   | -49,621  | -198,685 | -193,385 | 3,913,236  |
| 34 1962 Federal Report Surplus Deficit | -154,385 | -102,984 | -214,977 | -695      | 259,411   | -98,451   | 131,250  | 628,171  | 1,219,468 | 832,261   | -91,256   | 2,686    | -190,013 | -165,895 | 2,054,591  |
| 35 1963 Federal Report Surplus Deficit | 8,772    | 155,521  | 78,170   | 488,195   | 259,956   | -83,236   | -85,441  | -143,520 | 579,854   | 1,363,083 | 53,030    | -40,832  | -191,184 | -31,117  | 2,411,251  |
| 36 1964 Federal Report Surplus Deficit | -130,891 | -68,004  | -222,325 | -260,666  | -42,887   | -195,336  | 74,205   | -42,368  | 1,205,226 | 2,180,192 | 1,406,187 | 202,951  | -37,802  | 129,906  | 4,198,387  |
| 37 1965 Federal Report Surplus Deficit | 28,163   | 60,615   | 519,502  | 1,194,347 | 1,532,471 | 1,003,173 | 89,439   | 727,021  | 1,933,169 | 1,266,379 | 256,526   | 184,181  | -57,245  | -111,967 | 8,625,773  |
| 38 1966 Federal Report Surplus Deficit | -45,401  | -68,259  | -153,553 | -113,609  | 111,505   | -73,156   | 69,801   | 15,937   | 428,625   | 1,038,900 | 78,873    | -31,880  | -198,428 | -157,105 | 902,253    |
| 39 1967 Federal Report Surplus Deficit | -138,574 | -149,255 | -97,126  | 797,701   | 566,982   | 478,385   | 109,255  | -166,801 | 1,263,964 | 1,998,269 | 928,410   | 40,085   | -119,684 | -58,863  | 5,452,749  |
| 40 1968 Federal Report Surplus Deficit | -66,023  | 10,379   | -148,664 | 156,108   | 354,397   | 487,050   | -137,816 | -142,766 | 364,143   | 1,441,416 | 204,708   | 84,542   | -42,025  | 241,182  | 2,806,631  |
| 41 1969 Federal Report Surplus Deficit | 68,016   | 268,118  | 13,325   | 809,247   | 930,378   | 541,940   | 412,979  | 896,551  | 2,112,416 | 1,520,286 | 361,752   | -68,982  | -227,694 | -160,321 | 7,478,012  |
| 42 1970 Federal Report Surplus Deficit | -70,371  | -71,405  | -320,563 | 53,581    | 343,174   | 52,196    | -110,138 | -144,019 | 835,786   | 1,567,451 | -20,456   | -95,769  | -201,825 | -192,678 | 1,624,964  |
| 43 1971 Federal Report Surplus Deficit | -101,911 | -80,957  | -177,148 | 913,545   | 1,455,575 | 838,287   | 433,493  | 470,704  | 2,265,925 | 2,156,124 | 1,099,174 | 250,685  | 109,337  | -8,833   | 9,624,001  |
| 44 1972 Federal Report Surplus Deficit | -15,823  | 6,658    | -83,246  | 1,008,767 | 678,201   | 1,740,387 | 709,990  | 373,748  | 2,196,855 | 2,021,947 | 1,288,042 | 288,012  | 189,638  | 50,126   | 10,453,302 |
| 45 1973 Federal Report Surplus Deficit | -23,833  | -9,231   | -181,028 | -95,588   | 150,015   | -140,473  | -223,474 | -217,307 | 33,232    | 130,475   | -290,463  | -113,507 | -215,014 | -183,823 | -1,380,019 |
| 46 1974 Federal Report Surplus Deficit | -127,570 | -100,840 | 79,264   | 1,855,844 | 1,838,286 | 1,336,282 | 583,658  | 797,221  | 2,022,791 | 2,111,467 | 1,845,272 | 324,040  | 179,687  | 4,134    | 12,749,535 |
| 47 1975 Federal Report Surplus Deficit | -155,806 | -156,439 | -283,243 | 39,697    | 190,887   | 362,368   | -26,969  | -41,015  | 1,466,257 | 1,762,864 | 1,368,061 | 54,364   | -78,499  | 80,409   | 4,582,937  |
| 48 1976 Federal Report Surplus Deficit | 129,027  | 284,963  | 881,193  | 711,684   | 906,227   | 636,698   | 555,088  | 401,158  | 2,075,411 | 1,351,684 | 1,294,046 | 661,341  | 650,552  | 434,652  | 10,973,724 |
| 49 1977 Federal Report Surplus Deficit | -19,739  | -129,552 | -428,064 | -353,482  | -242,339  | -376,846  | -213,125 | -210,922 | -169,766  | -201,473  | -388,319  | -123,591 | -196,456 | -259,494 | -3,313,168 |
| 50 1978 Federal Report Surplus Deficit | -206,229 | -121,686 | -119,815 | -17,706   | 165,821   | 174,714   | 451,914  | 132,045  | 1,467,088 | 719,314   | 236,822   | -23,369  | -171,073 | 186,543  | 2,874,383  |
| 51 1979 Federal Report Surplus Deficit | -39,272  | -66,152  | -413,100 | -243,933  | -192,171  | 94,870    | -92,336  | -31,169  | 942,695   | 199,112   | -324,511  | -141,255 | -221,868 | -171,197 | -700,287   |
| 52 1980 Federal Report Surplus Deficit | -124,844 | -152,010 | -510,385 | -216,361  | -241,658  | -174,015  | 71,253   | 264,336  | 1,851,855 | 1,424,663 | -63,805   | -119,618 | -228,578 | -104,361 | 1,676,471  |
| 53 1981 Federal Report Surplus Deficit | -126,601 | -28,934  | 114,945  | 915,752   | 582,893   | -59,094   | -188,643 | -133,817 | 1,227,050 | 1,973,651 | 957,172   | 283,137  | 14,580   | -61,762  | 5,470,331  |
| 54 1982 Federal Report Surplus Deficit | -112,837 | 11,796   | -155,106 | 380,022   | 1,020,192 | 1,444,305 | 437,402  | 186,915  | 1,735,326 | 1,826,645 | 1,578,982 | 185,848  | 85,310   | 215,373  | 8,840,174  |
| 55 1983 Federal Report Surplus Deficit | 93,436   | 42,458   | -70,868  | 503,727   | 661,205   | 976,084   | 298,393  | 109,046  | 1,059,535 | 1,002,917 | 1,151,818 | 177,028  | 23,679   | 54,081   | 6,082,538  |
| 56 1984 Federal Report Surplus Deficit | -46,223  | 368,461  | 8,953    | 305,107   | 444,604   | 778,905   | 251,672  | 529,012  | 1,048,781 | 1,575,117 | 934,414   | 74,613   | -163,318 | 62,074   | 6,172,172  |
| 57 1985 Federal Report Surplus Deficit | -29,328  | 90,412   | -165,702 | -155,973  | 907       | -42,997   | 211,589  | 332,804  | 781,066   | 219,132   | -326,651  | -150,923 | -254,875 | -119,726 | 389,733    |
| 58 1986 Federal Report Surplus Deficit | -7,430   | 157,331  | -131,555 | 175,856   | 726,827   | 1,222,115 | 400,521  | 451,673  | 709,525   | 1,096,367 | -158,704  | -88,534  | -211,827 | -174,439 | 4,167,724  |
| 59 1987 Federal Report Surplus Deficit | -139,628 | 34,876   | -145,757 | -283,020  | -231,044  | 12,774    | -96,184  | -128,353 | 1,132,187 | 356,967   | -334,439  | -142,646 | -222,358 | -197,696 | -384,322   |
| 60 1988 Federal Report Surplus Deficit | -141,601 | -172,986 | -536,827 | -615,715  | -300,224  | -257,059  | -167,030 | -111,343 | 54,622    | 186,559   | -195,286  | -119,432 | -198,640 | -178,092 | -2,753,054 |
| 61 1989 Federal Report Surplus Deficit | -151,353 | -96,600  | -255,836 | -435,956  | -448,795  | 211,197   | 160,053  | 614,225  | 868,516   | 258,863   | -255,496  | -120,387 | -206,246 | -162,871 | -20,686    |
| 62 1990 Federal Report Surplus Deficit | -115,025 | -28,078  | -49,674  | 27,415    | 383,130   | 263,748   | 49,930   | 484,309  | 1,104,658 | 1,545,942 | 129,666   | 13,621   | -108,291 | -164,422 | 3,536,929  |



**Table 10.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2020**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B        | C        | D         | E         | F         | G         | H        | I        | J         | K         | L         | M        | N        | O        | P          |
|--|----------|----------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|----------|----------|------------|
| LLH-MWh - Surplus Deficit              | Oct      | Nov      | Dec       | Jan       | Feb       | Mar       | Apr1     | Apr16    | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 63 1991 Federal Report Surplus Deficit | -155,180 | 332,624  | 43,546    | 825,183   | 416,717   | 296,563   | 166,443  | 87,235   | 1,155,501 | 1,317,809 | 1,165,311 | 250,526  | -85,510  | -143,081 | 5,673,687  |
| 64 1992 Federal Report Surplus Deficit | -149,029 | -86,762  | -498,371  | -327,000  | -194,027  | -123,306  | -166,149 | -165,035 | 628,779   | 7,836     | -362,546  | -127,902 | -208,493 | -213,831 | -1,985,836 |
| 65 1993 Federal Report Surplus Deficit | -158,157 | -143,509 | -422,346  | -511,612  | -491,335  | -60,971   | -32,052  | -143,499 | 1,070,241 | 607,503   | -16,373   | -97,376  | -183,913 | -142,064 | -725,461   |
| 66 1994 Federal Report Surplus Deficit | -120,673 | -83,709  | -385,456  | -529,686  | -211,070  | -264,288  | -159,900 | -90,308  | 240,326   | 140,456   | -209,555  | -114,026 | -200,166 | -179,075 | -2,167,130 |
| 67 1995 Federal Report Surplus Deficit | -143,319 | -220,393 | -388,403  | -185,485  | 175,949   | 257,903   | -407     | -152,239 | 766,257   | 1,259,868 | 180,737   | -43,080  | -216,877 | -35,946  | 1,254,564  |
| 68 1996 Federal Report Surplus Deficit | 61,093   | 585,480  | 1,629,893 | 1,678,093 | 1,430,319 | 1,422,729 | 480,929  | 836,970  | 1,808,463 | 1,407,946 | 1,179,850 | 161,823  | -76,930  | -44,613  | 12,562,046 |
| 69 1997 Federal Report Surplus Deficit | -102,097 | 50,942   | 35,554    | 1,517,246 | 1,553,922 | 1,548,273 | 592,079  | 933,854  | 2,313,714 | 2,078,187 | 1,337,857 | 134,225  | 118,692  | 199,598  | 12,312,047 |
| 70 1998 Federal Report Surplus Deficit | 378,603  | 213,458  | -170,247  | -135,451  | 464,167   | 85,790    | -100,985 | -135,602 | 1,600,827 | 1,715,660 | 239,535   | 39,925   | -99,757  | -139,435 | 3,956,490  |
| 71 1999 Federal Report Surplus Deficit | -102,629 | -132,995 | -23,960   | 797,787   | 730,527   | 1,157,988 | 237,945  | 381,270  | 1,202,262 | 1,717,835 | 1,568,419 | 497,681  | 277,664  | -31,972  | 8,277,822  |
| 72 2000 Federal Report Surplus Deficit | -88,535  | 427,814  | 136,099   | 58,782    | 197,891   | 271,394   | 407,570  | 604,599  | 1,140,337 | 195,762   | 115,649   | -9,735   | -223,862 | -181,026 | 3,052,738  |
| 73 2001 Federal Report Surplus Deficit | -105,556 | -158,262 | -450,436  | -387,686  | -285,676  | -241,194  | -206,702 | -221,534 | -30,344   | -217,635  | -337,749  | -111,240 | -199,838 | -264,401 | -3,218,254 |
| 74 2002 Federal Report Surplus Deficit | -202,875 | -177,790 | -263,742  | -468,834  | -152,015  | -86,554   | 100,200  | 367,547  | 688,549   | 1,761,735 | 780,692   | -91,440  | -205,025 | -162,768 | 1,887,679  |
| 75 2003 Federal Report Surplus Deficit | -111,190 | -107,687 | -451,414  | -426,183  | -111,071  | 247,492   | 7,742    | -11,653  | 260,316   | 1,360,906 | -221,180  | -155,187 | -226,306 | -249,745 | -195,160   |
| 76 2004 Federal Report Surplus Deficit | -145,991 | -20,877  | -163,658  | -342,224  | -265,124  | -72,746   | -48,311  | -73,147  | 359,506   | 681,280   | -208,490  | -135,552 | -180,356 | 59,949   | -555,742   |
| 77 2005 Federal Report Surplus Deficit | -46,785  | -68,231  | -130,095  | -151,211  | 180,913   | -110,906  | -187,042 | -165,252 | 434,887   | 609,572   | -144,378  | -97,680  | -198,054 | -175,006 | -249,267   |
| 78 2006 Federal Report Surplus Deficit | -139,073 | -20,271  | -146,384  | 407,122   | 493,356   | 229,844   | 549,699  | 621,029  | 1,509,660 | 1,787,722 | -61,025   | -118,646 | -238,997 | -248,562 | 4,625,474  |
| 79 2007 Federal Report Surplus Deficit | -138,777 | 31,011   | -155,954  | 96,610    | 1,581     | 533,223   | 78,096   | -34,900  | 1,219,843 | 1,016,821 | 11,801    | -126,412 | -233,127 | -282,708 | 2,017,106  |
| 80 2008 Federal Report Surplus Deficit | -115,571 | -35,663  | -320,021  | -331,738  | -149,089  | -19,939   | -53,754  | -193,211 | 1,171,106 | 2,138,007 | 509,583   | -83,690  | -174,663 | -153,151 | 2,188,204  |

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**Table 10.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases Report Date: 5/9/2019**  
S183-RC-20190515-110000

| <b>A</b>                               | <b>B</b> | <b>C</b> | <b>D</b>  | <b>E</b>  | <b>F</b>  | <b>G</b>  | <b>H</b> | <b>I</b>  | <b>J</b>  | <b>K</b>  | <b>L</b>  | <b>M</b> | <b>N</b> | <b>O</b> | <b>P</b>   |
|--|----------|----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|----------|----------|------------|
| LLH-MWh - Surplus Deficit              | Oct      | Nov      | Dec       | Jan       | Feb       | Mar       | Apr1     | Apr16     | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 1 1929 Federal Report Surplus Deficit  | -135,584 | -159,150 | -375,382  | -471,306  | -239,911  | -127,170  | -134,880 | -166,044  | -270,475  | 478,921   | -198,984  | -147,620 | -100,017 | -102,403 | -2,150,004 |
| 2 1930 Federal Report Surplus Deficit  | -130,049 | -131,047 | -387,555  | -630,746  | -212,235  | -148,300  | -41,391  | -55,584   | -306,269  | -95,841   | -133,869  | -144,836 | -97,996  | -133,878 | -2,649,595 |
| 3 1931 Federal Report Surplus Deficit  | -121,748 | -117,069 | -314,311  | -614,141  | -258,552  | -141,466  | -69,159  | -176,581  | -254,165  | -174,661  | -154,662  | -136,879 | -99,325  | -134,224 | -2,766,944 |
| 4 1932 Federal Report Surplus Deficit  | -171,008 | -216,329 | -345,682  | -479,716  | -495,127  | 404,610   | 241,532  | 664,497   | 1,212,090 | 1,257,641 | 132,977   | -100,077 | -74,126  | -45,011  | 1,986,273  |
| 5 1933 Federal Report Surplus Deficit  | -136,800 | -144,335 | 295,016   | 478,185   | 331,260   | 268,329   | 132,272  | 50,167    | 581,040   | 2,166,441 | 1,757,444 | 203,185  | 58,440   | -26,690  | 6,013,954  |
| 6 1934 Federal Report Surplus Deficit  | -34,685  | 873,435  | 1,141,774 | 1,286,637 | 1,393,101 | 861,035   | 652,049  | 733,807   | 998,885   | 1,041,406 | -210,298  | -167,615 | -128,479 | -194,001 | 8,247,051  |
| 7 1935 Federal Report Surplus Deficit  | -150,140 | -285,187 | -237,058  | 457,007   | 165,939   | 250,302   | -38,770  | 143,908   | 357,104   | 299,942   | 154,892   | 38,885   | -111,606 | -143,393 | 901,822    |
| 8 1936 Federal Report Surplus Deficit  | -150,259 | -184,927 | -367,235  | -591,036  | -312,234  | -57,378   | -27,238  | 339,551   | 1,260,090 | 1,137,949 | -13,875   | -165,010 | -114,801 | -179,652 | 573,945    |
| 9 1937 Federal Report Surplus Deficit  | -121,106 | -97,056  | -319,366  | -653,014  | -323,358  | -217,070  | -119,955 | -169,872  | -198,468  | 267,961   | -172,575  | -144,801 | -102,748 | -103,457 | -2,474,884 |
| 10 1938 Federal Report Surplus Deficit | -143,134 | -135,996 | -119,020  | -22,945   | 171,138   | 570,654   | 361,879  | 676,397   | 1,171,609 | 707,123   | 241,617   | -160,221 | -141,720 | -80,356  | 3,097,026  |
| 11 1939 Federal Report Surplus Deficit | -129,491 | -209,026 | -405,177  | -257,973  | -62,618   | 63,339    | 32,132   | 188,201   | 171,831   | -48,933   | -93,652   | -175,054 | -118,303 | -163,285 | -1,208,008 |
| 12 1940 Federal Report Surplus Deficit | -105,702 | -69,765  | -22,412   | -196,785  | -114,985  | 434,493   | 161,750  | 95,650    | 277,599   | 65,927    | -280,076  | -184,547 | -131,878 | -139,524 | -210,257   |
| 13 1941 Federal Report Surplus Deficit | -151,451 | -74,410  | -161,705  | -385,912  | -151,124  | 11,282    | -101,923 | -174,216  | -271,341  | 7,005     | -131,503  | -136,925 | -105,785 | -54,601  | -1,882,610 |
| 14 1942 Federal Report Surplus Deficit | -153,524 | -21,879  | 468,782   | -34,279   | 86,978    | -97,684   | -61,170  | 65,195    | -31,684   | 1,271,983 | 472,117   | -34,938  | -17,445  | 53,149   | 1,965,600  |
| 15 1943 Federal Report Surplus Deficit | -127,355 | -174,599 | -171,190  | 442,852   | 333,214   | 577,928   | 797,473  | 689,690   | 517,315   | 1,853,408 | 1,160,519 | -29,791  | -81,979  | -91,812  | 5,695,674  |
| 16 1944 Federal Report Surplus Deficit | -145,972 | -144,239 | -361,864  | -338,204  | -239,401  | -205,891  | -156,889 | -178,376  | -366,812  | -59,303   | -223,873  | -150,242 | -111,190 | -143,328 | -2,825,585 |
| 17 1945 Federal Report Surplus Deficit | -151,109 | -163,155 | -307,200  | -538,272  | -303,034  | -161,672  | -137,658 | -183,470  | 241,895   | 1,133,641 | -130,376  | -151,676 | -108,600 | -127,452 | -1,088,136 |
| 18 1946 Federal Report Surplus Deficit | -142,662 | -87,649  | -71,027   | -106,599  | 168,624   | 411,157   | 508,853  | 722,461   | 1,645,895 | 869,257   | 560,296   | -19,577  | -57,682  | -23,836  | 4,377,510  |
| 19 1947 Federal Report Surplus Deficit | -145,776 | 58,869   | 908,481   | 926,463   | 523,659   | 596,890   | 308,082  | 226,532   | 919,527   | 1,123,581 | 381,305   | -88,565  | -105,611 | -50,541  | 5,582,896  |
| 20 1948 Federal Report Surplus Deficit | 444,271  | 533,339  | 455,578   | 846,264   | 460,746   | 298,920   | 240,915  | 500,518   | 2,057,233 | 2,346,026 | 563,539   | 186,407  | 63,868   | 66,320   | 9,063,946  |
| 21 1949 Federal Report Surplus Deficit | -93,404  | -62,057  | -132,379  | -7,611    | 71,287    | 610,698   | 354,015  | 577,932   | 1,256,490 | 681,433   | -160,414  | -183,879 | -146,375 | -163,841 | 2,601,898  |
| 22 1950 Federal Report Surplus Deficit | -156,410 | -159,232 | -28,015   | 900,735   | 483,137   | 702,728   | 511,845  | 377,792   | 874,412   | 2,026,171 | 2,100,700 | 141,027  | 49,776   | 26,165   | 7,850,828  |
| 23 1951 Federal Report Surplus Deficit | 87,233   | 634,846  | 976,559   | 1,278,156 | 1,223,685 | 963,221   | 589,220  | 561,306   | 1,263,605 | 923,103   | 1,156,805 | 2,579    | -105,650 | -26,410  | 9,528,258  |
| 24 1952 Federal Report Surplus Deficit | 245,992  | 180,451  | 472,043   | 839,196   | 428,683   | 287,800   | 550,045  | 784,026   | 1,715,602 | 985,315   | 257,804   | -71,125  | -123,329 | -174,825 | 6,377,677  |
| 25 1953 Federal Report Surplus Deficit | -129,771 | -171,236 | -358,710  | -301,341  | 701,283   | 139,501   | -121,095 | -53,402   | 508,882   | 2,040,026 | 1,106,930 | -47,929  | -61,519  | -26,928  | 3,224,690  |
| 26 1954 Federal Report Surplus Deficit | -101,344 | 25,089   | 199,187   | 648,845   | 489,960   | 507,902   | 203,029  | 227,045   | 1,331,467 | 2,013,598 | 2,000,335 | 433,173  | 444,435  | 340,627  | 8,763,347  |
| 27 1955 Federal Report Surplus Deficit | -78,720  | 258,921  | 275,980   | -304,692  | -108,745  | -263,388  | -84,025  | -126,079  | 170,910   | 2,211,289 | 2,046,406 | 107,598  | -2,624   | -49,434  | 4,053,398  |
| 28 1956 Federal Report Surplus Deficit | -50,337  | 475,411  | 968,871   | 1,229,012 | 842,356   | 1,017,774 | 465,319  | 1,011,105 | 2,027,024 | 2,234,964 | 878,559   | 40,286   | 22,934   | -1,153   | 11,162,125 |
| 29 1957 Federal Report Surplus Deficit | -48,926  | -77,351  | 248,624   | 110,395   | -41,440   | 529,004   | 479,120  | 286,681   | 1,823,145 | 2,179,483 | 51,099    | -71,478  | -137,851 | -129,555 | 5,200,950  |
| 30 1958 Federal Report Surplus Deficit | -121,532 | -132,014 | -115,994  | 475,600   | 247,609   | 252,934   | 62,399   | 366,301   | 1,291,221 | 1,578,062 | -19,853   | -95,892  | -135,357 | -116,779 | 3,536,703  |
| 31 1959 Federal Report Surplus Deficit | -95,456  | 212,040  | 763,563   | 995,568   | 975,134   | 395,861   | 396,265  | 205,258   | 1,149,101 | 1,819,342 | 1,330,522 | 77,509   | 54,694   | 486,205  | 8,765,606  |

**Table 10.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B        | C        | D         | E         | F         | G         | H        | I        | J         | K         | L         | M        | N        | O        | P          |
|--|----------|----------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|----------|----------|------------|
| LLH-MWh - Surplus Deficit              | Oct      | Nov      | Dec       | Jan       | Feb       | Mar       | Apr1     | Apr16    | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 32 1960 Federal Report Surplus Deficit | 769,381  | 922,566  | 750,452   | 717,964   | 196,036   | 324,568   | 540,056  | 467,372  | 294,992   | 1,217,806 | 124,292   | -34,600  | -127,239 | -108,701 | 6,054,945  |
| 33 1961 Federal Report Surplus Deficit | -110,444 | 17,574   | -60,964   | 480,721   | 290,882   | 612,675   | 338,243  | 94,149   | 1,164,265 | 2,077,483 | -10,722   | -89,495  | -104,673 | -138,225 | 4,561,469  |
| 34 1962 Federal Report Surplus Deficit | -161,950 | -96,294  | -71,042   | 402,645   | 230,234   | 14,725    | 169,509  | 660,800  | 738,455   | 801,847   | 18,614    | -43,524  | -94,715  | -112,936 | 2,456,368  |
| 35 1963 Federal Report Surplus Deficit | 12,839   | 256,627  | 660,779   | 760,203   | 279,288   | 19,576    | -39,495  | -85,264  | 279,956   | 1,282,986 | 141,655   | -81,934  | -100,342 | 10,458   | 3,397,330  |
| 36 1964 Federal Report Surplus Deficit | -140,967 | -63,721  | -84,468   | -203,969  | -11,274   | -77,222   | 131,022  | 27,308   | 724,186   | 2,260,986 | 1,534,414 | 60,579   | 43,654   | 159,761  | 4,360,289  |
| 37 1965 Federal Report Surplus Deficit | 32,598   | 123,927  | 1,028,363 | 1,387,897 | 1,402,624 | 989,538   | 122,798  | 744,070  | 1,526,386 | 1,381,229 | 340,824   | 65,392   | 21,949   | -66,595  | 9,101,001  |
| 38 1966 Federal Report Surplus Deficit | -47,936  | -63,339  | 56,797    | 202,393   | 117,782   | -2,297    | 166,029  | 81,742   | 53,045    | 868,014   | 115,047   | -77,401  | -105,978 | -105,430 | 1,258,469  |
| 39 1967 Federal Report Surplus Deficit | -144,997 | -151,221 | 292,694   | 981,117   | 537,869   | 539,229   | 139,268  | -125,942 | 787,098   | 2,220,909 | 976,259   | -7,330   | -34,609  | -17,926  | 5,992,419  |
| 40 1968 Federal Report Surplus Deficit | -70,437  | 23,254   | 38,795    | 485,080   | 355,604   | 577,847   | -85,037  | -95,630  | 14,720    | 1,376,208 | 212,038   | 22,150   | 44,630   | 269,091  | 3,168,313  |
| 41 1969 Federal Report Surplus Deficit | 76,940   | 527,950  | 517,574   | 1,102,590 | 936,524   | 607,950   | 460,045  | 922,124  | 1,639,983 | 1,465,425 | 352,195   | -103,526 | -135,152 | -105,220 | 8,265,400  |
| 42 1970 Federal Report Surplus Deficit | -72,525  | -66,925  | -203,622  | 198,311   | 323,683   | 176,255   | -70,480  | -105,314 | 448,535   | 1,575,697 | 101,884   | -130,895 | -111,015 | -139,775 | 1,923,816  |
| 43 1971 Federal Report Surplus Deficit | -106,194 | -72,451  | -33,179   | 1,269,020 | 1,082,285 | 845,925   | 469,008  | 524,260  | 1,861,699 | 2,300,743 | 1,164,384 | 128,439  | 159,570  | 32,591   | 9,626,101  |
| 44 1972 Federal Report Surplus Deficit | -13,434  | 21,172   | 137,542   | 1,138,417 | 556,665   | 1,882,657 | 783,888  | 447,014  | 1,866,608 | 2,292,368 | 1,355,979 | 169,886  | 207,844  | 87,971   | 10,934,579 |
| 45 1973 Federal Report Surplus Deficit | -26,981  | -348     | -32,401   | 88,525    | 179,430   | -24,521   | -181,965 | -181,350 | -243,181  | 16,927    | -167,298  | -146,362 | -122,057 | -132,552 | -974,133   |
| 46 1974 Federal Report Surplus Deficit | -133,807 | -95,789  | 464,881   | 1,582,862 | 1,680,893 | 1,314,132 | 607,759  | 787,648  | 1,686,834 | 2,243,294 | 2,168,515 | 202,394  | 199,984  | 41,644   | 12,751,245 |
| 47 1975 Federal Report Surplus Deficit | -162,722 | -157,526 | -169,243  | 303,669   | 189,501   | 513,037   | -17,114  | 27,509   | 919,712   | 1,881,895 | 1,448,315 | 7,464    | 8,598    | 110,654  | 4,903,747  |
| 48 1976 Federal Report Surplus Deficit | 144,683  | 668,161  | 1,195,084 | 1,015,180 | 886,687   | 699,850   | 584,864  | 478,936  | 1,638,891 | 1,325,688 | 1,435,526 | 531,329  | 719,257  | 407,842  | 11,731,977 |
| 49 1977 Federal Report Surplus Deficit | -18,776  | -126,976 | -305,758  | -315,936  | -209,438  | -255,314  | -175,857 | -177,281 | -378,984  | -199,579  | -263,897  | -157,106 | -104,230 | -211,782 | -2,900,914 |
| 50 1978 Federal Report Surplus Deficit | -212,017 | -118,153 | -30,524   | -13,549   | 180,430   | 275,179   | 523,368  | 211,860  | 945,597   | 673,775   | 326,172   | -67,012  | -74,525  | 215,092  | 2,835,692  |
| 51 1979 Federal Report Surplus Deficit | -35,022  | -61,230  | -299,435  | -190,993  | -157,381  | 211,588   | -41,985  | 30,018   | 593,680   | 71,699    | -209,154  | -176,736 | -132,831 | -116,502 | -514,285   |
| 52 1980 Federal Report Surplus Deficit | -130,083 | -149,766 | -409,127  | -178,641  | -208,995  | -57,358   | 115,918  | 344,373  | 1,394,410 | 1,344,544 | 48,480    | -156,504 | -136,895 | -58,176  | 1,762,180  |
| 53 1981 Federal Report Surplus Deficit | -132,941 | -20,722  | 677,344   | 1,010,307 | 517,619   | 61,752    | -135,226 | -81,560  | 749,717   | 2,026,231 | 1,004,468 | 162,109  | 56,495   | -19,683  | 5,875,909  |
| 54 1982 Federal Report Surplus Deficit | -119,345 | 44,130   | 2,239     | 593,672   | 904,372   | 1,440,283 | 481,873  | 291,830  | 1,287,231 | 1,895,857 | 1,780,959 | 55,067   | 130,692  | 243,205  | 9,032,063  |
| 55 1983 Federal Report Surplus Deficit | 105,010  | 62,697   | 221,972   | 842,132   | 609,701   | 1,001,703 | 359,799  | 182,578  | 724,491   | 1,077,741 | 1,173,226 | 73,986   | 98,282   | 91,043   | 6,624,361  |
| 56 1984 Federal Report Surplus Deficit | -46,396  | 778,064  | 389,436   | 663,518   | 422,563   | 821,572   | 301,542  | 569,955  | 783,971   | 1,654,864 | 955,344   | 26,614   | -70,104  | 99,591   | 7,350,534  |
| 57 1985 Federal Report Surplus Deficit | -29,367  | 114,948  | -26,889   | -105,224  | 36,372    | 55,907    | 254,502  | 392,022  | 417,565   | 147,427   | -203,840  | -184,055 | -155,745 | -73,196  | 640,426    |
| 58 1986 Federal Report Surplus Deficit | -6,909   | 218,101  | 81,736    | 365,160   | 710,318   | 1,213,222 | 430,781  | 495,988  | 370,355   | 1,040,117 | -46,178   | -123,405 | -121,025 | -125,081 | 4,503,180  |
| 59 1987 Federal Report Surplus Deficit | -150,034 | 48,078   | 19,439    | -250,305  | -192,458  | 123,247   | -45,166  | -74,692  | 647,579   | 159,881   | -226,516  | -175,683 | -128,530 | -146,191 | -391,351   |
| 60 1988 Federal Report Surplus Deficit | -146,913 | -175,874 | -439,081  | -593,304  | -258,425  | -136,519  | -118,133 | -41,321  | -223,122  | 26,993    | -95,219   | -153,049 | -106,544 | -124,127 | -2,584,638 |
| 61 1989 Federal Report Surplus Deficit | -156,515 | -96,037  | -143,623  | -401,736  | -394,384  | 332,198   | 204,248  | 661,942  | 418,653   | 190,401   | -140,510  | -155,644 | -113,933 | -111,988 | 93,071     |
| 62 1990 Federal Report Surplus Deficit | -123,456 | -27,495  | 379,010   | 316,648   | 476,452   | 359,749   | 79,996   | 523,829  | 625,061   | 1,520,561 | 211,877   | -39,386  | -18,235  | -113,554 | 4,171,058  |

**Table 10.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2021**  
**BP20 Final Proposal with Sales and Purchases** Report Date: 5/9/2019  
S183-RC-20190515-110000

| A                                      | B        | C         | D         | E         | F         | G         | H        | I        | J         | K         | L         | M        | N        | O        | P          |
|--|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|----------|----------|------------|
| LLH-MWh - Surplus Deficit              | Oct      | Nov       | Dec       | Jan       | Feb       | Mar       | Apr1     | Apr16    | May       | Jun       | Jul       | Aug1     | Aug16    | Sep      | Sum        |
| 63 1991 Federal Report Surplus Deficit | -164,103 | 780,545   | 599,967   | 1,008,013 | 411,876   | 365,389   | 197,275  | 146,949  | 672,962   | 1,270,443 | 1,277,276 | 103,923  | -4,754   | -104,193 | 6,561,568  |
| 64 1992 Federal Report Surplus Deficit | -159,651 | -90,911   | -394,353  | -304,310  | -151,115  | -4,980    | -122,880 | -118,449 | 174,600   | -96,297   | -246,488  | -159,934 | -113,136 | -164,686 | -1,952,588 |
| 65 1993 Federal Report Surplus Deficit | -160,626 | -137,216  | -300,566  | -490,607  | -433,119  | 56,292    | 8,859    | -90,638  | 745,302   | 594,404   | 105,023   | -128,944 | -89,917  | -92,603  | -414,356   |
| 66 1994 Federal Report Surplus Deficit | -129,704 | -76,524   | -266,837  | -504,660  | -170,467  | -145,615  | -113,889 | -9,375   | -45,447   | -31,836   | -98,137   | -148,712 | -108,320 | -127,576 | -1,977,099 |
| 67 1995 Federal Report Surplus Deficit | -148,244 | -221,355  | -274,773  | -186,570  | 199,812   | 362,682   | 46,702   | -85,467  | 522,234   | 1,231,419 | 301,339   | -86,590  | -125,529 | 1,700    | 1,537,361  |
| 68 1996 Federal Report Surplus Deficit | 65,877   | 1,034,558 | 1,309,302 | 1,371,372 | 1,321,547 | 1,413,467 | 510,866  | 827,812  | 1,315,529 | 1,470,246 | 1,241,413 | 48,075   | 2,106    | -1,237   | 11,930,936 |
| 69 1997 Federal Report Surplus Deficit | -108,936 | 64,482    | 468,043   | 1,710,745 | 1,460,190 | 1,529,734 | 622,238  | 915,427  | 2,035,384 | 2,340,865 | 1,435,166 | 52,628   | 181,061  | 229,167  | 12,936,194 |
| 70 1998 Federal Report Surplus Deficit | 504,839  | 443,798   | -14,205   | -112,087  | 447,003   | 201,490   | -62,105  | -71,588  | 1,212,433 | 1,659,043 | 323,680   | 13,134   | -14,478  | -91,388  | 4,439,569  |
| 71 1999 Federal Report Surplus Deficit | -112,853 | -131,591  | 406,147   | 1,027,346 | 596,979   | 1,262,149 | 299,754  | 431,012  | 767,480   | 1,746,112 | 1,723,340 | 364,765  | 275,174  | 5,989    | 8,661,802  |
| 72 2000 Federal Report Surplus Deficit | -94,542  | 857,847   | 694,510   | 374,522   | 196,753   | 398,445   | 440,613  | 626,458  | 688,920   | 125,556   | 108,613   | -60,660  | -129,646 | -125,158 | 4,102,230  |
| 73 2001 Federal Report Surplus Deficit | -114,245 | -157,229  | -331,374  | -350,292  | -249,327  | -118,862  | -159,448 | -186,226 | -288,057  | -204,653  | -217,774  | -144,485 | -108,045 | -218,564 | -2,848,582 |
| 74 2002 Federal Report Surplus Deficit | -212,273 | -178,826  | -148,180  | -438,767  | -124,297  | 31,644    | 147,567  | 426,590  | 254,415   | 1,747,741 | 818,255   | -126,411 | -109,956 | -113,218 | 1,974,285  |
| 75 2003 Federal Report Surplus Deficit | -114,633 | -102,890  | -334,364  | -396,829  | -76,411   | 358,586   | 74,626   | 60,298   | -11,333   | 1,254,132 | -107,518  | -189,072 | -137,208 | -203,437 | 73,947     |
| 76 2004 Federal Report Surplus Deficit | -151,688 | 6,433     | 32,492    | -312,909  | -228,488  | 26,470    | 8,550    | -15,156  | 65,074    | 553,253   | -91,308   | -166,408 | -83,142  | 94,056   | -262,769   |
| 77 2005 Federal Report Surplus Deficit | -45,894  | -58,933   | 242,037   | 150,608   | 195,934   | 22,754    | -142,320 | -131,744 | 148,080   | 423,459   | -32,560   | -129,738 | -106,023 | -128,592 | 407,068    |
| 78 2006 Federal Report Surplus Deficit | -146,266 | -5,820    | 8,172     | 696,674   | 453,587   | 359,494   | 583,249  | 656,346  | 1,223,578 | 1,782,703 | 24,478    | -152,592 | -143,851 | -202,607 | 5,137,144  |
| 79 2007 Federal Report Surplus Deficit | -147,390 | 45,418    | 13,260    | 414,847   | 37,017    | 614,403   | 111,237  | 43,028   | 736,501   | 828,609   | 52,848    | -162,958 | -140,062 | -238,050 | 2,208,706  |
| 80 2008 Federal Report Surplus Deficit | -121,674 | -24,708   | -202,962  | -310,630  | -110,010  | 92,592    | -16,197  | -142,504 | 858,202   | 2,351,499 | 501,991   | -121,525 | -79,384  | -103,426 | 2,571,264  |

