

BP-18 Rate Proceeding

Final Proposal

# Power Loads and Resources Study Documentation

BP-18-FS-BPA-03A

July 2017





**POWER LOADS AND RESOURCES STUDY DOCUMENTATION  
TABLE OF CONTENTS**

	<b>Page</b>
COMMONLY USED ACRONYMS AND SHORT FORMS .....	iii
<b>1. DOCUMENTATION FOR - POWER LOADS AND RESOURCES STUDY .....</b>	<b>1</b>
Table 1.1.1 Load Following Service Customers.....	2
Table 1.1.2 Tier 1 Block Service Customers .....	3
Table 1.1.3 Slice Service Customers .....	3
Table 1.1.4 USBR Obligation Customers.....	3
Table 1.2.1 BPA Sales to Preference and Legacy Customers - Energy.....	4
Table 1.2.2 BPA Sales to Preference and Legacy Customers - HLH MWh.....	6
Table 1.2.3 BPA Sales to Preference and Legacy Customers - LLH MWh.....	8
<b>2. OTHER CONTRACT DELIVERIES AND PURCHASE FORECASTS.....</b>	<b>11</b>
Table 2.1.1 BPA–Power Services Exports - Energy.....	12
Table 2.1.2 BPA–Power Services Exports - HLH MWh.....	14
Table 2.1.3 BPA–Power Services Exports - LLH MWh .....	16
Table 2.2.1 BPA–Power Services Imports - Energy.....	18
Table 2.2.2 BPA–Power Services Imports - HLH MWh.....	20
Table 2.2.3 BPA–Power Services Imports - LLH MWh .....	22
Table 2.3.1 BPA–Power Services: Intra-Regional Transfers - Energy.....	24
Table 2.3.2 BPA–Power Services: Intra-Regional Transfers - HLH MWh.....	26
Table 2.3.3 BPA–Power Services: Intra-Regional Transfers - LLH MWh.....	28
Table 2.4.1 Non-Federal CER Deliveries to BPA - Energy .....	30
Table 2.4.2 Non-Federal CER Deliveries to BPA - HLH MWh .....	32
Table 2.4.3 Non-Federal CER Deliveries to BPA - LLH MWh.....	34
<b>3. HYDRO RESOURCE FORECASTS FOR FY 2018 AND FY 2019.....</b>	<b>37</b>
Table 3.1.1 BPA–Power Services: Regulated Hydro - Energy.....	38
Table 3.1.2 BPA–Power Services: Regulated Hydro - HLH MWh.....	40
Table 3.1.3 BPA–Power Services: Regulated Hydro - LLH MWh .....	42
Table 3.2.1 BPA–Power Services: Independent Hydro - Energy .....	44
Table 3.2.2 BPA–Power Services: Independent Hydro - HLH MWh.....	46
Table 3.2.3 BPA–Power Services: Independent Hydro - LLH MWh .....	48
Table 3.3.1 BPA– Power Services: Small Hydro - Energy .....	50
Table 3.3.2 BPA– Power Services: Small Hydro - HLH MWh .....	52
Table 3.3.3 BPA– Power Services: Small Hydro - LLH MWh.....	54

<b>4.</b>	<b>OTHER RESOURCE FORECASTS FOR FY 2018 AND FY 2019 .....</b>	<b>57</b>
	Table 4.1.1 BPA–Power Services: Large Thermal Resources - Energy.....	58
	Table 4.1.2 BPA–Power Services: Large Thermal Resources - HLH MWh....	60
	Table 4.1.3 BPA–Power Services: Large Thermal Resources - LLH MWh ....	62
	Table 4.2.1 BPA–Power Services: Renewable Resources - Energy .....	64
	Table 4.2.2 BPA–Power Services: Renewable Resources - HLH MWh.....	66
	Table 4.2.3 BPA–Power Services: Renewable Resources - LLH MWh .....	68
<b>5.</b>	<b>FEDERAL REGULATED HYDRO FORECASTS</b>	
	<b>BY WATER YEAR FROM HYDSIM.....</b>	<b>71</b>
	Table 5.1.1 Federal Regulated Hydro Generation	
	by Water Year reported by HYDSIM – Energy aMW .....	72
<b>6.</b>	<b>PNW REGIONAL HYDRO FORECASTS BY WATER YEAR .....</b>	<b>77</b>
	Table 6.1.1 Total Regional Hydro Resources by Water Year - Energy.....	78
<b>7.</b>	<b>4(H)(10)(C) CREDIT .....</b>	<b>83</b>
	Table 7.1.1 FY 2018 - 4(h)(10)(C) Power Purchase Amount.....	84
	Table 7.1.2 FY 2019 - 4(h)(10)(C) Power Purchase Amount.....	86
<b>8.</b>	<b>FEDERAL TIER 1 SYSTEM FIRM CRITICAL OUTPUT .....</b>	<b>89</b>
	Table 8.1.1 Federal Tier 1 System Firm Critical Output Projection.....	91
	Table 8.1.2 Federal System Hydro Generation for use in the	
	T1SFCO Calculation.....	92
	Table 8.1.3 Designated Non-Federally Owned Resources for use in the	
	T1SFCO Calculation.....	93
	Table 8.1.4 Designated BPA Contract Purchases for use in the	
	T1SFCO Calculation.....	94
	Table 8.1.5 Designated BPA System Obligations for use in the	
	T1SFCO Calculation.....	95
<b>9.</b>	<b>HYDRO REGULATION ASSUMPTIONS .....</b>	<b>97</b>
	HYDSIM Hydro Regulation Study Assumptions for 2018 and 2019 .....	99
<b>10.</b>	<b>FEDERAL LOADS AND RESOURCES FOR FY 2018 AND FY 2019.....</b>	<b>113</b>
	Table 10.1.1 Loads and Resources - Federal System - Energy.....	114
	Table 10.1.2 Loads and Resources - Federal System - HLH MWh.....	118
	Table 10.1.3 Loads and Resources - Federal System - LLH MWh.....	122
<b>11.</b>	<b>FEDERAL LOADS AND RESOURCES SURPLUS/DEFICIT BY</b>	
	<b>WATER YEAR .....</b>	<b>127</b>
	Table 11.1.1 Federal Loads and Resources Surplus/Deficit by	
	Water Year - Energy .....	128
	Table 11.1.2 Federal Loads and Resources Surplus/Deficit by	
	Water Year - HLH MWh .....	132
	Table 11.1.3 Federal Loads and Resources Surplus/Deficit by	
	Water Year - LLH MWh.....	136

## 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
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
FOIA	Freedom Of Information Act
FORS	Forced Outage Reserve Service
FPS	Firm Power and Surplus Products and Services
FPT	Formula Power Transmission
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
LPTAC	Large Project Targeted Adjustment Charge

LTF	Long-term Form
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
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
Peak	Peak Reliability (assessment/charge)
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
Project Act	Bonneville Project Act

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

**Table 1.1.2  
Tier 1 Block Service Customers**

	<b>A</b>	<b>B</b>	<b>C</b>
1	Pend Oreille	Seattle	

**Table 1.1.3  
Slice Service Customers**

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

**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 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

Energy-aMW	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Avg
<b>Pacific Northwest</b>															
<b>1 Load Following</b>	<b>2,877</b>	<b>3,351</b>	<b>3,791</b>	<b>3,734</b>	<b>3,536</b>	<b>3,127</b>	<b>3,174</b>	<b>3,197</b>	<b>3,188</b>	<b>3,333</b>	<b>3,613</b>	<b>3,428</b>	<b>3,431</b>	<b>3,098</b>	<b>3,355</b>
2 Cooperative	1,499	1,777	2,038	2,000	1,898	1,639	1,607	1,621	1,656	1,791	1,949	1,852	1,853	1,613	1,777
3 Municipality	458	565	634	644	607	522	489	494	452	455	492	490	491	453	522
4 Public Utility District	716	865	950	935	885	787	726	731	659	647	669	675	676	675	765
5 Federal Entities	96	125	149	144	131	113	96	97	90	92	104	101	101	94	111
6 USBR	108	20	21	10	15	67	256	253	332	349	400	310	309	263	180
<b>7 Tier 1 Block</b>	<b>481</b>	<b>788</b>	<b>776</b>	<b>842</b>	<b>792</b>	<b>759</b>	<b>378</b>	<b>381</b>	<b>120</b>	<b>0</b>	<b>289</b>	<b>343</b>	<b>343</b>	<b>578</b>	<b>511</b>
8 Municipality	481	788	776	842	792	759	378	381	120	0	289	343	343	578	511
9 Public Utility District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>10 Slice Block</b>	<b>1,328</b>	<b>1,540</b>	<b>1,758</b>	<b>1,752</b>	<b>1,612</b>	<b>1,490</b>	<b>1,384</b>	<b>1,384</b>	<b>1,334</b>	<b>1,306</b>	<b>1,371</b>	<b>1,338</b>	<b>1,338</b>	<b>1,289</b>	<b>1,458</b>
11 Municipality	264	311	378	375	359	347	307	307	262	252	277	271	271	272	306
12 Public Utility District	1,064	1,229	1,380	1,377	1,254	1,143	1,077	1,077	1,073	1,054	1,094	1,067	1,067	1,017	1,152
<b>13 Slice Output from T1 System</b>	<b>1,418</b>	<b>1,830</b>	<b>1,731</b>	<b>1,373</b>	<b>1,470</b>	<b>1,519</b>	<b>1,386</b>	<b>1,473</b>	<b>2,137</b>	<b>1,811</b>	<b>1,432</b>	<b>1,702</b>	<b>1,463</b>	<b>1,466</b>	<b>1,600</b>
14 Municipality	331	427	404	320	343	354	323	344	499	423	334	397	341	342	373
15 Public Utility District	1,087	1,403	1,327	1,052	1,127	1,164	1,062	1,129	1,638	1,388	1,098	1,305	1,121	1,124	1,227
<b>Total Power Sales Contracts</b>															
16 Cooperative	1,499	1,777	2,038	2,000	1,898	1,639	1,607	1,621	1,656	1,791	1,949	1,852	1,853	1,613	1,777
17 Federal Entities	96	125	149	144	131	113	96	97	90	92	104	101	101	94	111
18 Municipality	1,534	2,092	2,192	2,182	2,101	1,982	1,497	1,526	1,332	1,130	1,391	1,501	1,446	1,645	1,712
19 Public Utility District	2,867	3,496	3,657	3,364	3,266	3,094	2,865	2,938	3,370	3,089	2,861	3,048	2,865	2,815	3,144
20 USBR	108	20	21	10	15	67	256	253	332	349	400	310	309	263	180
<b>40 Total Power Sales Contracts</b>	<b>6,104</b>	<b>7,510</b>	<b>8,057</b>	<b>7,701</b>	<b>7,410</b>	<b>6,894</b>	<b>6,321</b>	<b>6,435</b>	<b>6,780</b>	<b>6,450</b>	<b>6,704</b>	<b>6,811</b>	<b>6,574</b>	<b>6,430</b>	<b>6,924</b>

**Table 1.2.1**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

Energy-aMW	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Avg
<b>Pacific Northwest</b>															
<b>1 Load Following</b>	<b>2,891</b>	<b>3,367</b>	<b>3,806</b>	<b>3,757</b>	<b>3,554</b>	<b>3,144</b>	<b>3,205</b>	<b>3,205</b>	<b>3,210</b>	<b>3,361</b>	<b>3,637</b>	<b>3,450</b>	<b>3,453</b>	<b>3,115</b>	<b>3,375</b>
2 Cooperative	1,498	1,777	2,038	2,002	1,897	1,638	1,613	1,613	1,657	1,793	1,950	1,853	1,855	1,614	1,777
3 Municipality	462	570	637	644	603	519	491	491	451	459	493	490	491	452	522
4 Public Utility District	714	863	947	943	893	795	736	736	666	655	677	683	684	679	770
5 Federal Entities	110	138	162	158	146	126	110	110	103	105	117	114	114	108	125
6 USBR	108	20	21	10	15	67	254	254	332	349	400	310	309	263	180
<b>7 Tier 1 Block</b>	<b>485</b>	<b>795</b>	<b>782</b>	<b>849</b>	<b>799</b>	<b>765</b>	<b>382</b>	<b>382</b>	<b>121</b>	<b>0</b>	<b>291</b>	<b>346</b>	<b>346</b>	<b>583</b>	<b>515</b>
8 Municipality	485	795	782	849	799	765	382	382	121	0	291	346	346	583	515
9 Public Utility District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>10 Slice Block</b>	<b>1,379</b>	<b>1,601</b>	<b>1,829</b>	<b>1,822</b>	<b>1,676</b>	<b>1,550</b>	<b>1,439</b>	<b>1,439</b>	<b>1,386</b>	<b>1,355</b>	<b>1,422</b>	<b>1,388</b>	<b>1,388</b>	<b>1,338</b>	<b>1,515</b>
11 Municipality	280	332	403	400	382	370	327	327	279	269	294	288	288	289	326
12 Public Utility District	1,098	1,269	1,426	1,422	1,295	1,180	1,112	1,112	1,107	1,086	1,128	1,100	1,100	1,049	1,189
<b>13 Slice Output from T1 System</b>	<b>1,419</b>	<b>1,830</b>	<b>1,732</b>	<b>1,374</b>	<b>1,470</b>	<b>1,518</b>	<b>1,385</b>	<b>1,478</b>	<b>1,971</b>	<b>1,564</b>	<b>1,406</b>	<b>1,702</b>	<b>1,464</b>	<b>1,466</b>	<b>1,564</b>
14 Municipality	331	427	404	321	343	354	323	345	460	365	328	397	342	342	365
15 Public Utility District	1,088	1,403	1,328	1,053	1,127	1,164	1,062	1,133	1,511	1,199	1,078	1,305	1,122	1,124	1,199
<b>Total Power Sales Contracts</b>															
16 Cooperative	1,498	1,777	2,038	2,002	1,897	1,638	1,613	1,613	1,657	1,793	1,950	1,853	1,855	1,614	1,777
17 Federal Entities	110	138	162	158	146	126	110	110	103	105	117	114	114	108	125
18 Municipality	1,559	2,124	2,227	2,213	2,127	2,009	1,523	1,545	1,312	1,093	1,406	1,521	1,466	1,666	1,728
19 Public Utility District	2,901	3,535	3,701	3,418	3,315	3,138	2,910	2,981	3,284	2,940	2,882	3,088	2,906	2,852	3,159
20 USBR	108	20	21	10	15	67	254	254	332	349	400	310	309	263	180
<b>40 Total Power Sales Contracts</b>	<b>6,175</b>	<b>7,594</b>	<b>8,150</b>	<b>7,802</b>	<b>7,499</b>	<b>6,978</b>	<b>6,411</b>	<b>6,504</b>	<b>6,688</b>	<b>6,280</b>	<b>6,756</b>	<b>6,886</b>	<b>6,650</b>	<b>6,502</b>	<b>6,969</b>

**Table 1.2.2**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

HLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Pacific Northwest</b>															
<b>1 Load Following</b>	<b>1,292,610</b>	<b>1,428,780</b>	<b>1,642,904</b>	<b>1,650,571</b>	<b>1,438,622</b>	<b>1,417,596</b>	<b>655,494</b>	<b>710,119</b>	<b>1,416,356</b>	<b>1,474,690</b>	<b>1,566,770</b>	<b>754,690</b>	<b>812,743</b>	<b>1,290,894</b>	<b>17,552,840</b>
2 Cooperative	685,774	754,000	884,576	879,381	768,368	741,586	337,982	366,147	734,775	795,825	863,756	414,698	446,598	695,612	9,369,079
3 Municipality	213,236	246,401	279,690	289,863	251,496	243,156	104,699	113,423	209,037	210,518	225,762	114,200	122,984	199,200	2,823,665
4 Public Utility District	324,435	370,925	412,384	414,907	362,954	361,844	151,102	163,694	294,708	290,763	294,146	152,953	164,718	285,535	4,045,069
5 Federal Entities	43,230	51,081	62,797	61,603	51,506	49,308	19,577	21,209	39,006	40,230	45,859	22,216	23,925	39,085	570,631
6 USBR	25,935	6,373	3,458	4,816	4,297	21,702	42,134	45,645	138,830	137,354	137,246	50,624	54,518	71,462	744,396
<b>7 Tier 1 Block</b>	<b>214,802</b>	<b>340,998</b>	<b>346,368</b>	<b>375,903</b>	<b>319,518</b>	<b>338,313</b>	<b>78,617</b>	<b>85,169</b>	<b>53,701</b>	<b>0</b>	<b>128,881</b>	<b>73,689</b>	<b>79,357</b>	<b>249,707</b>	<b>2,685,022</b>
8 Municipality	214,802	340,998	346,368	375,903	319,518	338,313	78,617	85,169	53,701	0	128,881	73,689	79,357	249,707	2,685,022
9 Public Utility District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>10 Slice Block</b>	<b>552,386</b>	<b>615,973</b>	<b>703,392</b>	<b>728,924</b>	<b>619,094</b>	<b>643,481</b>	<b>265,751</b>	<b>287,897</b>	<b>555,021</b>	<b>543,278</b>	<b>548,228</b>	<b>278,313</b>	<b>299,722</b>	<b>494,790</b>	<b>7,136,249</b>
11 Municipality	109,764	124,506	151,308	156,093	137,679	149,800	58,884	63,791	108,841	104,991	110,642	56,302	60,633	104,351	1,497,586
12 Public Utility District	442,622	491,467	552,085	572,831	481,415	493,681	206,867	224,106	446,179	438,287	437,586	222,011	239,089	390,439	5,638,663
<b>13 Slice Output from T1 System</b>	<b>683,953</b>	<b>830,358</b>	<b>805,521</b>	<b>622,088</b>	<b>629,481</b>	<b>714,875</b>	<b>315,762</b>	<b>353,369</b>	<b>1,026,214</b>	<b>845,354</b>	<b>694,509</b>	<b>425,768</b>	<b>364,044</b>	<b>674,450</b>	<b>8,985,745</b>
14 Municipality	159,625	193,794	187,998	145,187	146,912	166,842	73,695	82,471	239,505	197,294	162,089	99,369	84,963	157,407	2,097,152
15 Public Utility District	524,327	636,563	617,523	476,901	482,569	548,033	242,067	270,897	786,709	648,059	532,420	326,400	279,081	517,042	6,888,593
<b>Total Power Sales Contracts</b>															
16 Cooperative	685,774	754,000	884,576	879,381	768,368	741,586	337,982	366,147	734,775	795,825	863,756	414,698	446,598	695,612	9,369,079
17 Federal Entities	43,230	51,081	62,797	61,603	51,506	49,308	19,577	21,209	39,006	40,230	45,859	22,216	23,925	39,085	570,631
18 Municipality	697,427	905,699	965,363	967,047	855,605	898,111	315,895	344,855	611,084	512,803	627,374	343,560	347,938	710,665	9,103,425
19 Public Utility District	1,291,384	1,498,955	1,581,992	1,464,639	1,326,938	1,403,558	600,036	658,697	1,527,596	1,377,109	1,264,152	701,363	682,888	1,193,016	16,572,325
20 USBR	25,935	6,373	3,458	4,816	4,297	21,702	42,134	45,645	138,830	137,354	137,246	50,624	54,518	71,462	744,396
<b>40 Total Power Sales Contracts</b>	<b>2,743,751</b>	<b>3,216,109</b>	<b>3,498,186</b>	<b>3,377,486</b>	<b>3,006,714</b>	<b>3,114,265</b>	<b>1,315,624</b>	<b>1,436,553</b>	<b>3,051,292</b>	<b>2,863,322</b>	<b>2,938,388</b>	<b>1,532,461</b>	<b>1,555,866</b>	<b>2,709,840</b>	<b>36,359,856</b>



**Table 1.2.2**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

HLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Pacific Northwest</b>															
<b>1 Load Following</b>	<b>1,336,181</b>	<b>1,446,456</b>	<b>1,662,796</b>	<b>1,674,335</b>	<b>1,459,768</b>	<b>1,415,173</b>	<b>713,778</b>	<b>713,778</b>	<b>1,443,965</b>	<b>1,472,139</b>	<b>1,636,733</b>	<b>770,038</b>	<b>829,272</b>	<b>1,319,143</b>	<b>17,893,553</b>
2 Cooperative	703,185	765,398	898,028	894,592	782,073	750,823	364,526	364,526	753,742	808,827	894,181	425,136	457,838	716,710	9,579,585
3 Municipality	220,250	248,250	281,260	289,828	249,958	236,118	111,730	111,730	209,151	207,793	232,166	114,279	123,069	198,828	2,834,411
4 Public Utility District	332,609	370,021	411,784	418,104	366,409	356,051	163,650	163,650	297,808	286,540	305,211	154,938	166,856	287,470	4,081,101
5 Federal Entities	49,402	56,414	68,267	66,995	57,031	54,201	23,395	23,395	44,433	45,560	52,098	25,062	26,990	44,673	637,914
6 USBR	30,734	6,373	3,458	4,816	4,297	17,980	50,476	50,476	138,830	123,420	153,077	50,624	54,518	71,462	760,541
<b>7 Tier 1 Block</b>	<b>216,611</b>	<b>343,870</b>	<b>349,286</b>	<b>379,070</b>	<b>322,209</b>	<b>341,162</b>	<b>82,583</b>	<b>82,583</b>	<b>54,153</b>	<b>0</b>	<b>129,967</b>	<b>74,310</b>	<b>80,026</b>	<b>251,810</b>	<b>2,707,639</b>
8 Municipality	216,611	343,870	349,286	379,070	322,209	341,162	82,583	82,583	54,153	0	129,967	74,310	80,026	251,810	2,707,639
9 Public Utility District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>10 Slice Block</b>	<b>595,648</b>	<b>640,380</b>	<b>731,600</b>	<b>757,747</b>	<b>643,700</b>	<b>644,775</b>	<b>299,311</b>	<b>299,311</b>	<b>576,459</b>	<b>542,120</b>	<b>591,443</b>	<b>288,692</b>	<b>310,899</b>	<b>513,907</b>	<b>7,435,992</b>
11 Municipality	121,142	132,852	161,381	166,222	146,560	153,905	68,019	68,019	116,126	107,558	122,385	59,819	64,420	111,105	1,599,512
12 Public Utility District	474,506	507,528	570,219	591,525	497,140	490,870	231,292	231,292	460,333	434,562	469,058	228,873	246,478	402,803	5,836,480
<b>13 Slice Output from T1 System</b>	<b>690,692</b>	<b>837,987</b>	<b>811,721</b>	<b>624,958</b>	<b>631,127</b>	<b>720,806</b>	<b>318,679</b>	<b>354,579</b>	<b>939,211</b>	<b>758,866</b>	<b>684,206</b>	<b>427,456</b>	<b>365,453</b>	<b>678,279</b>	<b>8,844,022</b>
14 Municipality	161,198	195,575	189,445	145,857	147,297	168,226	74,375	82,754	219,199	177,109	159,684	99,763	85,292	158,301	2,064,076
15 Public Utility District	529,493	642,412	622,276	479,102	483,831	552,579	244,304	271,825	720,012	581,757	524,521	327,694	280,161	519,978	6,779,946
<b>Total Power Sales Contracts</b>															
16 Cooperative	703,185	765,398	898,028	894,592	782,073	750,823	364,526	364,526	753,742	808,827	894,181	425,136	457,838	716,710	9,579,585
17 Federal Entities	49,402	56,414	68,267	66,995	57,031	54,201	23,395	23,395	44,433	45,560	52,098	25,062	26,990	44,673	637,914
18 Municipality	719,202	920,547	981,371	980,977	866,023	899,411	336,707	345,086	598,630	492,460	644,202	348,170	352,807	720,044	9,205,639
19 Public Utility District	1,336,608	1,519,961	1,604,279	1,488,730	1,347,380	1,399,501	639,246	666,768	1,478,153	1,302,859	1,298,791	711,504	693,496	1,210,251	16,697,527
20 USBR	30,734	6,373	3,458	4,816	4,297	17,980	50,476	50,476	138,830	123,420	153,077	50,624	54,518	71,462	760,541
<b>40 Total Power Sales Contracts</b>	<b>2,839,132</b>	<b>3,268,693</b>	<b>3,555,403</b>	<b>3,436,110</b>	<b>3,056,804</b>	<b>3,121,916</b>	<b>1,414,351</b>	<b>1,450,251</b>	<b>3,013,788</b>	<b>2,773,125</b>	<b>3,042,349</b>	<b>1,560,496</b>	<b>1,585,649</b>	<b>2,763,140</b>	<b>36,881,206</b>

**Table 1.2.3**  
**BPA Sales to Preference and Legacy Customers**  
**Fiscal Year 2018 Water Year: 1937**  
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S144-RC-20170510-065615

LLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G AprI	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Pacific Northwest</b>															
<b>1 Load Following</b>	<b>848,141</b>	<b>987,645</b>	<b>1,177,764</b>	<b>1,127,229</b>	<b>937,320</b>	<b>905,435</b>	<b>487,021</b>	<b>440,638</b>	<b>955,838</b>	<b>924,866</b>	<b>1,121,356</b>	<b>479,377</b>	<b>504,607</b>	<b>939,662</b>	<b>11,836,900</b>
2 Cooperative	429,298	527,105	631,439	608,532	506,882	475,843	240,441	217,542	497,426	493,550	585,990	251,887	265,144	465,772	6,196,850
3 Municipality	127,525	161,277	191,819	189,339	156,469	144,817	71,326	64,533	126,978	116,738	140,001	62,260	65,537	127,157	1,745,775
4 Public Utility District	208,467	252,590	294,130	280,722	231,775	222,574	110,120	99,632	195,428	175,015	203,812	90,193	94,940	200,258	2,659,656
5 Federal Entities	28,468	38,748	47,983	45,743	36,473	34,453	15,038	13,606	27,842	25,846	31,484	14,015	14,753	28,631	403,083
6 USBR	54,382	7,925	12,394	2,893	5,721	27,747	50,097	45,325	108,165	113,717	160,069	61,022	64,233	117,844	831,535
<b>7 Tier 1 Block</b>	<b>143,201</b>	<b>227,332</b>	<b>230,912</b>	<b>250,602</b>	<b>213,012</b>	<b>225,542</b>	<b>57,325</b>	<b>51,866</b>	<b>35,800</b>	<b>0</b>	<b>85,921</b>	<b>49,707</b>	<b>52,324</b>	<b>166,472</b>	<b>1,790,015</b>
8 Municipality	143,201	227,332	230,912	250,602	213,012	225,542	57,325	51,866	35,800	0	85,921	49,707	52,324	166,472	1,790,015
9 Public Utility District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>10 Slice Block</b>	<b>435,535</b>	<b>494,308</b>	<b>604,928</b>	<b>574,728</b>	<b>464,317</b>	<b>463,240</b>	<b>232,528</b>	<b>210,382</b>	<b>437,612</b>	<b>397,007</b>	<b>471,484</b>	<b>203,379</b>	<b>214,083</b>	<b>432,946</b>	<b>5,636,479</b>
11 Municipality	86,545	99,914	130,127	123,073	103,258	107,840	51,523	46,616	85,817	76,724	95,153	41,143	43,309	91,308	1,182,350
12 Public Utility District	348,990	394,394	474,802	451,655	361,059	355,400	181,005	163,767	351,795	320,283	376,331	162,236	170,774	341,638	4,454,129
<b>13 Slice Output from T1 System</b>	<b>370,805</b>	<b>489,031</b>	<b>482,690</b>	<b>399,159</b>	<b>358,327</b>	<b>413,598</b>	<b>183,124</b>	<b>177,007</b>	<b>563,639</b>	<b>458,565</b>	<b>370,674</b>	<b>187,053</b>	<b>197,673</b>	<b>380,875</b>	<b>5,032,219</b>
14 Municipality	86,541	114,133	112,653	93,158	83,629	96,528	42,739	41,311	131,546	107,023	86,510	43,656	46,134	88,891	1,174,452
15 Public Utility District	284,264	374,898	370,037	306,001	274,698	317,070	140,385	135,696	432,093	351,542	284,164	143,397	151,539	291,984	3,857,767
<b>Total Power Sales Contracts</b>															
16 Cooperative	429,298	527,105	631,439	608,532	506,882	475,843	240,441	217,542	497,426	493,550	585,990	251,887	265,144	465,772	6,196,850
17 Federal Entities	28,468	38,748	47,983	45,743	36,473	34,453	15,038	13,606	27,842	25,846	31,484	14,015	14,753	28,631	403,083
18 Municipality	443,812	602,656	665,510	656,173	556,367	574,728	222,912	204,325	380,141	300,485	407,585	196,766	207,304	473,827	5,892,592
19 Public Utility District	841,722	1,021,882	1,138,968	1,038,378	867,532	895,044	431,510	399,094	979,316	846,840	864,307	395,825	417,253	833,880	10,971,552
20 USBR	54,382	7,925	12,394	2,893	5,721	27,747	50,097	45,325	108,165	113,717	160,069	61,022	64,233	117,844	831,535
<b>40 Total Power Sales Contracts</b>	<b>1,797,683</b>	<b>2,198,316</b>	<b>2,496,295</b>	<b>2,351,719</b>	<b>1,972,975</b>	<b>2,007,815</b>	<b>959,998</b>	<b>879,893</b>	<b>1,992,889</b>	<b>1,780,438</b>	<b>2,049,436</b>	<b>919,515</b>	<b>968,687</b>	<b>1,919,954</b>	<b>24,295,612</b>

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S144-RC-20170510-065615

LLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Pacific Northwest</b>															
<b>1 Load Following</b>	<b>815,072</b>	<b>981,468</b>	<b>1,169,030</b>	<b>1,120,926</b>	<b>928,452</b>	<b>920,944</b>	<b>440,092</b>	<b>440,092</b>	<b>944,323</b>	<b>947,709</b>	<b>1,068,950</b>	<b>471,858</b>	<b>496,693</b>	<b>923,871</b>	<b>11,669,478</b>
2 Cooperative	411,074	515,667	618,439	595,044	492,658	466,074	216,294	216,294	479,282	482,050	556,718	241,830	254,557	445,050	5,991,032
3 Municipality	123,408	162,474	192,709	189,061	155,317	149,655	64,962	64,962	126,740	122,989	134,516	62,163	65,435	126,582	1,740,972
4 Public Utility District	198,927	252,115	293,044	283,649	233,880	234,320	101,489	101,489	197,942	184,709	198,397	90,921	95,706	201,559	2,668,148
5 Federal Entities	32,081	43,287	52,443	50,279	40,877	39,425	16,222	16,222	32,194	30,311	35,079	15,923	16,761	32,836	453,939
6 USBR	49,582	7,925	12,394	2,893	5,721	31,469	41,125	41,125	108,165	127,650	144,239	61,022	64,233	117,844	815,387
<b>7 Tier 1 Block</b>	<b>144,407</b>	<b>229,247</b>	<b>232,857</b>	<b>252,713</b>	<b>214,806</b>	<b>227,442</b>	<b>55,055</b>	<b>55,055</b>	<b>36,102</b>	<b>0</b>	<b>86,644</b>	<b>50,126</b>	<b>52,764</b>	<b>167,874</b>	<b>1,805,093</b>
8 Municipality	144,407	229,247	232,857	252,713	214,806	227,442	55,055	55,055	36,102	0	86,644	50,126	52,764	167,874	1,805,093
9 Public Utility District	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>10 Slice Block</b>	<b>430,181</b>	<b>513,894</b>	<b>629,187</b>	<b>597,454</b>	<b>482,772</b>	<b>506,835</b>	<b>218,725</b>	<b>218,725</b>	<b>454,515</b>	<b>433,687</b>	<b>466,330</b>	<b>210,963</b>	<b>222,067</b>	<b>449,675</b>	<b>5,835,011</b>
11 Municipality	87,489	106,612	138,790	131,060	109,920	120,979	49,706	49,706	91,561	86,044	96,496	43,713	46,014	97,218	1,255,306
12 Public Utility District	342,692	407,282	490,397	466,394	372,853	385,856	169,020	169,020	362,954	347,643	369,834	167,250	176,053	352,457	4,579,705
<b>13 Slice Output from T1 System</b>	<b>365,145</b>	<b>481,792</b>	<b>476,890</b>	<b>397,281</b>	<b>356,491</b>	<b>407,252</b>	<b>179,891</b>	<b>177,438</b>	<b>527,077</b>	<b>367,121</b>	<b>361,887</b>	<b>185,440</b>	<b>196,611</b>	<b>377,079</b>	<b>4,857,394</b>
14 Municipality	85,220	112,444	111,300	92,720	83,200	95,047	41,984	41,412	123,013	85,681	84,459	43,279	45,886	88,005	1,133,650
15 Public Utility District	279,925	369,348	365,590	304,561	273,291	312,205	137,907	136,026	404,064	281,440	277,427	142,161	150,724	289,074	3,723,743
<b>Total Power Sales Contracts</b>															
16 Cooperative	411,074	515,667	618,439	595,044	492,658	466,074	216,294	216,294	479,282	482,050	556,718	241,830	254,557	445,050	5,991,032
17 Federal Entities	32,081	43,287	52,443	50,279	40,877	39,425	16,222	16,222	32,194	30,311	35,079	15,923	16,761	32,836	453,939
18 Municipality	440,524	610,776	675,655	665,553	563,242	593,123	211,706	211,134	377,415	294,715	402,116	199,282	210,100	479,679	5,935,021
19 Public Utility District	821,544	1,028,745	1,149,031	1,054,604	880,024	932,381	408,416	406,536	964,960	813,792	845,659	400,332	422,483	843,090	10,971,596
20 USBR	49,582	7,925	12,394	2,893	5,721	31,469	41,125	41,125	108,165	127,650	144,239	61,022	64,233	117,844	815,387
<b>40 Total Power Sales Contracts</b>	<b>1,754,805</b>	<b>2,206,401</b>	<b>2,507,963</b>	<b>2,368,373</b>	<b>1,982,521</b>	<b>2,062,472</b>	<b>893,763</b>	<b>891,311</b>	<b>1,962,016</b>	<b>1,748,517</b>	<b>1,983,811</b>	<b>918,388</b>	<b>968,134</b>	<b>1,918,499</b>	<b>24,166,976</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 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

Energy-aMW	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Avg
<b>Canada</b>															
<b>Contracts</b>															
1 BPA-P to BCHP Trty CEA	469	469	469	469	469	469	451	488	469	469	469	462	466	464	468
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	15	92	92	0	9
<b>3 Total Exports to CAN</b>	<b>469</b>	<b>469</b>	<b>469</b>	<b>469</b>	<b>469</b>	<b>469</b>	<b>451</b>	<b>488</b>	<b>469</b>	<b>469</b>	<b>485</b>	<b>553</b>	<b>558</b>	<b>464</b>	<b>478</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>5 Total Exports to ECD</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>	<b>0</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	23	18	14	15	12	19	34	31	33	38	39	39	39	29	26
9 BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1
<b>12 Total Exports to PSW</b>	<b>24</b>	<b>19</b>	<b>14</b>	<b>16</b>	<b>13</b>	<b>20</b>	<b>35</b>	<b>32</b>	<b>34</b>	<b>39</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>30</b>	<b>27</b>
<b>Total Exports</b>															
13 Federal Entities	493	488	484	485	482	489	485	520	504	508	525	594	598	494	505
<b>14 Total Exports</b>	<b>493</b>	<b>488</b>	<b>484</b>	<b>485</b>	<b>482</b>	<b>489</b>	<b>485</b>	<b>520</b>	<b>504</b>	<b>508</b>	<b>525</b>	<b>594</b>	<b>598</b>	<b>494</b>	<b>505</b>

**Table 2.1.1**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

Energy-aMW	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Avg
<b>Canada</b>															
<b>Contracts</b>															
1 BPA-P to BCHP Trty CEA	464	464	464	464	464	464	464	464	464	464	464	452	456	454	462
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	16	92	92	0	9
<b>3 Total Exports to CAN</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>480</b>	<b>544</b>	<b>548</b>	<b>454</b>	<b>472</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>5 Total Exports to ECD</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>	<b>0</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	22	18	14	14	12	0	0	0	0	0	0	0	0	0	7
9 BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Exports to PSW</b>	<b>23</b>	<b>19</b>	<b>14</b>	<b>14</b>	<b>12</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>7</b>
<b>Total Exports</b>															
13 Federal Entities	487	483	479	478	476	464	464	464	464	464	480	544	548	454	478
<b>14 Total Exports</b>	<b>487</b>	<b>483</b>	<b>479</b>	<b>478</b>	<b>476</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>464</b>	<b>480</b>	<b>544</b>	<b>548</b>	<b>454</b>	<b>478</b>

**Table 2.1.2**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

HLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Canada</b>															
<b>Contracts</b>															
1 BPA-P to BCHP Trty CEA	349,218	338,422	349,218	349,218	315,423	348,749	162,218	175,736	349,218	337,953	349,218	166,239	179,027	334,128	4,103,985
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	6,448	19,108	20,578	0	46,135
<b>3 Total Exports to CAN</b>	<b>349,218</b>	<b>338,422</b>	<b>349,218</b>	<b>349,218</b>	<b>315,423</b>	<b>348,749</b>	<b>162,218</b>	<b>175,736</b>	<b>349,218</b>	<b>337,953</b>	<b>355,666</b>	<b>185,347</b>	<b>199,605</b>	<b>334,128</b>	<b>4,150,120</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>5 Total Exports to ECD</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>	<b>0</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Exports to PSW</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>	<b>0</b>
<b>Total Exports</b>															
13 Federal Entities	349,218	338,422	349,218	349,218	315,423	348,749	162,218	175,736	349,218	337,953	355,666	185,347	199,605	334,128	4,150,120
<b>14 Total Exports</b>	<b>349,218</b>	<b>338,422</b>	<b>349,218</b>	<b>349,218</b>	<b>315,423</b>	<b>348,749</b>	<b>162,218</b>	<b>175,736</b>	<b>349,218</b>	<b>337,953</b>	<b>355,666</b>	<b>185,347</b>	<b>199,605</b>	<b>334,128</b>	<b>4,150,120</b>



**Table 2.1.2**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
**S144-RC-20170510-065615**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>															
<sup>1</sup> BPA-P to BCHP Trty CEA	345,265	334,592	345,265	345,265	311,853	344,801	167,064	167,064	345,265	334,128	345,265	162,740	175,259	327,096	4,050,924
<sup>2</sup> BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	6,448	19,098	20,567	0	46,114
<sup>3</sup> Total Exports to CAN	<b>345,265</b>	<b>334,592</b>	<b>345,265</b>	<b>345,265</b>	<b>311,853</b>	<b>344,801</b>	<b>167,064</b>	<b>167,064</b>	<b>345,265</b>	<b>334,128</b>	<b>351,713</b>	<b>181,839</b>	<b>195,826</b>	<b>327,096</b>	<b>4,097,037</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
<sup>4</sup> BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>5</sup> Total Exports to ECD	<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>	<b>0</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
<sup>6</sup> BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>7</sup> BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>8</sup> BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>9</sup> BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>10</sup> BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>11</sup> Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>12</sup> Total Exports to PSW	<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>	<b>0</b>
<b>Total Exports</b>															
<sup>13</sup> Federal Entities	345,265	334,592	345,265	345,265	311,853	344,801	167,064	167,064	345,265	334,128	351,713	181,839	195,826	327,096	4,097,037
<sup>14</sup> Total Exports	<b>345,265</b>	<b>334,592</b>	<b>345,265</b>	<b>345,265</b>	<b>311,853</b>	<b>344,801</b>	<b>167,064</b>	<b>167,064</b>	<b>345,265</b>	<b>334,128</b>	<b>351,713</b>	<b>181,839</b>	<b>195,826</b>	<b>327,096</b>	<b>4,097,037</b>

**Table 2.1.3**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

LLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Canada</b>															
<b>Contracts</b>															
1 BPA-P to BCHP Trty CEA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	5084	13911	14644	0	33639
<b>3 Total Exports to CAN</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>5084</b>	<b>13911</b>	<b>14644</b>	<b>0</b>	<b>33639</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>5 Total Exports to ECD</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>	<b>0</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	17400	13160	10304	11296	8256	14184	12188	11028	24880	27288	29248	14066	14806	21152	229255
9 BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	522	395	309	339	248	426	366	331	746	819	877	422	444	635	6878
<b>12 Total Exports to PSW</b>	<b>17922</b>	<b>13555</b>	<b>10613</b>	<b>11635</b>	<b>8504</b>	<b>14609</b>	<b>12554</b>	<b>11358</b>	<b>25626</b>	<b>28107</b>	<b>30125</b>	<b>14488</b>	<b>15250</b>	<b>21786</b>	<b>236133</b>
<b>Total Exports</b>															
13 Federal Entities	17922	13555	10613	11635	8504	14609	12554	11358	25626	28107	35209	28399	29894	21786	269772
<b>14 Total Exports</b>	<b>17922</b>	<b>13555</b>	<b>10613</b>	<b>11635</b>	<b>8504</b>	<b>14609</b>	<b>12554</b>	<b>11358</b>	<b>25626</b>	<b>28107</b>	<b>35209</b>	<b>28399</b>	<b>29894</b>	<b>21786</b>	<b>269772</b>

**Table 2.1.3**  
**Bonneville Power Administration - Power Services Exports**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

LLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Canada</b>															
<b>Contracts</b>															
1 BPA-P to BCHP Trty CEA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	5084	13904	14636	0	33624
<b>3 Total Exports to CAN</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>5084</b>	<b>13904</b>	<b>14636</b>	<b>0</b>	<b>33624</b>
<b>East Continental Divide</b>															
<b>Contracts</b>															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>5 Total Exports to ECD</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>	<b>0</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
6 BPA-P to PASA CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA-P to PASA SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA-P to Other Entities	16416	13240	10432	10136	7816	208	0	0	0	0	0	0	0	0	58248
9 BPA-P to RVSD CNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 BPA-P to RVSD SNX Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Intertie Losses	492	397	313	304	234	6	0	0	0	0	0	0	0	0	1747
<b>12 Total Exports to PSW</b>	<b>16908</b>	<b>13637</b>	<b>10745</b>	<b>10440</b>	<b>8051</b>	<b>214</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>59995</b>
<b>Total Exports</b>															
13 Federal Entities	16908	13637	10745	10440	8051	214	0	0	0	0	5084	13904	14636	0	93619
<b>14 Total Exports</b>	<b>16908</b>	<b>13637</b>	<b>10745</b>	<b>10440</b>	<b>8051</b>	<b>214</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5084</b>	<b>13904</b>	<b>14636</b>	<b>0</b>	<b>93619</b>

**Table 2.2.1**  
**Bonneville Power Administration - Power Services Imports**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Energy-aMW	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 LCALgcyRtn	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 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>9 Total Imports From PSW</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>	<b>0</b>
<b>Total Imports</b>															
10 Federal Entities	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>11 Total Imports</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>

**Table 2.2.1**  
**Bonneville Power Administration - Power Services Imports**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 LCALgcyRtn	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 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>9 Total Imports From PSW</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>	<b>0</b>
<b>Total Imports</b>															
10 Federal Entities	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>11 Total Imports</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>

**Table 2.2.2**  
**Bonneville Power Administration - Power Services Imports**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Canada</b>															
<b>Contracts</b>															
<sup>1</sup> BCHP to BPA-P Trty LCALgcyRtn	416	400	400	416	384	432	192	208	416	416	400	208	224	384	4896
<sup>2</sup> Total Imports From CAN	<b>416</b>	<b>400</b>	<b>400</b>	<b>416</b>	<b>384</b>	<b>432</b>	<b>192</b>	<b>208</b>	<b>416</b>	<b>416</b>	<b>400</b>	<b>208</b>	<b>224</b>	<b>384</b>	<b>4896</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
<sup>3</sup> PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>4</sup> PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>5</sup> PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>6</sup> RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>7</sup> RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>8</sup> RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<sup>9</sup> Total Imports From PSW	<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>	<b>0</b>
<b>Total Imports</b>															
<sup>10</sup> Federal Entities	416	400	400	416	384	432	192	208	416	416	400	208	224	384	4896
<sup>11</sup> Total Imports	<b>416</b>	<b>400</b>	<b>400</b>	<b>416</b>	<b>384</b>	<b>432</b>	<b>192</b>	<b>208</b>	<b>416</b>	<b>416</b>	<b>400</b>	<b>208</b>	<b>224</b>	<b>384</b>	<b>4896</b>

**Table 2.2.2**  
**Bonneville Power Administration - Power Services Imports**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 LCALgcyRtn	432	400	400	416	384	416	208	208	416	400	416	208	224	384	4912
<b>2 Total Imports From CAN</b>	<b>432</b>	<b>400</b>	<b>400</b>	<b>416</b>	<b>384</b>	<b>416</b>	<b>208</b>	<b>208</b>	<b>416</b>	<b>400</b>	<b>416</b>	<b>208</b>	<b>224</b>	<b>384</b>	<b>4912</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>9 Total Imports From PSW</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>	<b>0</b>
<b>Total Imports</b>															
10 Federal Entities	432	400	400	416	384	416	208	208	416	400	416	208	224	384	4912
<b>11 Total Imports</b>	<b>432</b>	<b>400</b>	<b>400</b>	<b>416</b>	<b>384</b>	<b>416</b>	<b>208</b>	<b>208</b>	<b>416</b>	<b>400</b>	<b>416</b>	<b>208</b>	<b>224</b>	<b>384</b>	<b>4912</b>

**Table 2.2.3**  
**Bonneville Power Administration - Power Services Imports**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 LCALgcyRtn	328	321	344	328	288	311	168	152	328	304	344	152	160	336	3864
<b>2 Total Imports From CAN</b>	<b>328</b>	<b>321</b>	<b>344</b>	<b>328</b>	<b>288</b>	<b>311</b>	<b>168</b>	<b>152</b>	<b>328</b>	<b>304</b>	<b>344</b>	<b>152</b>	<b>160</b>	<b>336</b>	<b>3864</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>9 Total Imports From PSW</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>	<b>0</b>
<b>Total Imports</b>															
10 Federal Entities	328	321	344	328	288	311	168	152	328	304	344	152	160	336	3864
<b>11 Total Imports</b>	<b>328</b>	<b>321</b>	<b>344</b>	<b>328</b>	<b>288</b>	<b>311</b>	<b>168</b>	<b>152</b>	<b>328</b>	<b>304</b>	<b>344</b>	<b>152</b>	<b>160</b>	<b>336</b>	<b>3864</b>



**Table 2.2.3**  
**Bonneville Power Administration - Power Services Imports**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 LCALgcyRtn	312	321	344	328	288	327	152	152	328	320	328	152	160	336	3848
<b>2 Total Imports From CAN</b>	<b>312</b>	<b>321</b>	<b>344</b>	<b>328</b>	<b>288</b>	<b>327</b>	<b>152</b>	<b>152</b>	<b>328</b>	<b>320</b>	<b>328</b>	<b>152</b>	<b>160</b>	<b>336</b>	<b>3848</b>
<b>Pacific Southwest</b>															
<b>Contracts</b>															
3 PASA to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA-P CNX EER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA-P CNX Repl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA-P SNX Ret	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>9 Total Imports From PSW</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>	<b>0</b>
<b>Total Imports</b>															
10 Federal Entities	312	321	344	328	288	327	152	152	328	320	328	152	160	336	3848
<b>11 Total Imports</b>	<b>312</b>	<b>321</b>	<b>344</b>	<b>328</b>	<b>288</b>	<b>327</b>	<b>152</b>	<b>152</b>	<b>328</b>	<b>320</b>	<b>328</b>	<b>152</b>	<b>160</b>	<b>336</b>	<b>3848</b>

**Table 2.3.1**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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>39.4</b>	<b>152</b>	<b>144</b>	<b>148</b>	<b>141</b>	<b>98.5</b>	<b>109</b>	<b>110</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>91.7</b>
1 BPA-P to AVWP Setl WNP3 Del	0	113	113	113	113	55.8	55.8	55.8	0	0	0	0	0	0	46.4
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 PPL NSP RIn	4.41	5.31	3.68	3.24	2.77	2.17	4.69	4.72	5.03	4.97	6.35	5.33	5.33	4.26	4.36
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	3.89	3.77	3.92	4.01	0	0	0	0	0	0	0	0	0	1.28
7 BPA-P to PSE Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Other Entities to BPA-P	20.4	16.9	11.1	16.2	8.95	26.5	34.2	34.4	32.9	42.8	34.6	38.5	38.5	25.3	25.8
9 PPL to BPA-P NSP SOut	5.15	3.80	3.24	2.50	2.40	4.56	5.18	5.21	4.81	6.56	5.33	4.13	4.12	4.57	4.36
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>39.4</b>	<b>152</b>	<b>144</b>	<b>148</b>	<b>141</b>	<b>98.5</b>	<b>109</b>	<b>110</b>	<b>52.2</b>	<b>63.7</b>	<b>55.7</b>	<b>57.4</b>	<b>57.3</b>	<b>43.6</b>	<b>91.7</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
14 Investor Owned Utilities	4.4	122.0	120.4	120.1	119.7	58.0	60.5	60.5	5.0	5.0	6.3	5.3	5.3	4.3	52.1
<b>15 Total Regional Contracts Out</b>	<b>14</b>	<b>131</b>	<b>130</b>	<b>130</b>	<b>129</b>	<b>67</b>	<b>70</b>	<b>70</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>62</b>
<b>Intra-Regional Contracts In</b>															
16 Investor Owned Utilities	26	21	14	19	11	31	39	40	38	49	40	43	43	30	30
<b>17 Total Regional Contracts In</b>	<b>26</b>	<b>21</b>	<b>14</b>	<b>19</b>	<b>11</b>	<b>31</b>	<b>39</b>	<b>40</b>	<b>38</b>	<b>49</b>	<b>40</b>	<b>43</b>	<b>43</b>	<b>30</b>	<b>30</b>

**Table 2.3.1**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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>39.4</b>	<b>152</b>	<b>144</b>	<b>148</b>	<b>136</b>	<b>72.0</b>	<b>75.2</b>	<b>75.2</b>	<b>19.3</b>	<b>21.0</b>	<b>21.2</b>	<b>18.9</b>	<b>18.9</b>	<b>18.3</b>	<b>71.7</b>
1 BPA-P to AVWP Setl WNP3 Del	0	113	113	113	113	55.8	55.8	55.8	0	0	0	0	0	0	46.4
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 PPL NSP RIn	4.42	5.27	3.68	3.24	2.77	2.17	4.73	4.73	5.05	4.97	6.38	5.37	5.37	4.26	4.37
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	3.89	3.77	3.92	4.01	0	0	0	0	0	0	0	0	0	1.28
7 BPA-P to PSE Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Other Entities to BPA-P	20.4	16.9	11.1	16.2	4.48	0	0	0	0	0	0	0	0	0	5.79
9 PPL to BPA-P NSP SOut	5.11	3.80	3.24	2.50	2.40	4.58	5.22	5.22	4.81	6.59	5.37	4.13	4.12	4.57	4.37
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>39.4</b>	<b>152</b>	<b>144</b>	<b>148</b>	<b>136</b>	<b>72.0</b>	<b>75.2</b>	<b>75.2</b>	<b>19.3</b>	<b>21.0</b>	<b>21.2</b>	<b>18.9</b>	<b>18.9</b>	<b>18.3</b>	<b>71.7</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
14 Investor Owned Utilities	4.4	121.9	120.4	120.1	119.7	58.0	60.5	60.5	5.0	5.0	6.4	5.4	5.4	4.3	52.1
<b>15 Total Regional Contracts Out</b>	<b>14</b>	<b>131</b>	<b>130</b>	<b>130</b>	<b>129</b>	<b>67</b>	<b>70</b>	<b>70</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>62</b>
<b>Intra-Regional Contracts In</b>															
16 Investor Owned Utilities	26	21	14	19	7	5	5	5	5	7	5	4	4	5	10
<b>17 Total Regional Contracts In</b>	<b>26</b>	<b>21</b>	<b>14</b>	<b>19</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>10</b>

**Table 2.3.2**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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>16,212</b>	<b>58,078</b>	<b>58,023</b>	<b>61,873</b>	<b>53,980</b>	<b>41,589</b>	<b>21,643</b>	<b>23,447</b>	<b>21,365</b>	<b>25,238</b>	<b>21,513</b>	<b>11,586</b>	<b>12,477</b>	<b>17,031</b>	<b>444,055</b>
1 BPA-P to AVWP Setl WNP3 Del	0	41,573	45,072	45,072	41,605	22,519	10,793	11,692	0	0	0	0	0	0	218,326
2 BPA-P to BPA-T Ops IntrlAgmt	3,926	3,775	3,775	3,926	3,624	4,077	1,812	1,963	3,926	3,926	3,775	1,963	2,114	3,624	46,204
3 BPA-P to PPL NSP RIn	1,840	2,122	1,360	1,240	1,206	806	954	1,033	2,197	1,706	2,746	1,098	1,182	1,550	21,040
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	2,800	2,800	2,912	2,688	0	0	0	0	0	0	0	0	0	11,200
7 BPA-P to PSE Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Other Entities to BPA-P	8,324	6,448	3,776	7,517	4,051	12,200	7,030	7,616	13,537	16,860	12,712	7,779	8,377	10,015	126,242
9 PPL to BPA-P NSP SOut	2,122	1,360	1,240	1,206	806	1,987	1,054	1,142	1,706	2,746	2,280	746	804	1,843	21,043
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>16,212</b>	<b>58,078</b>	<b>58,023</b>	<b>61,873</b>	<b>53,980</b>	<b>41,589</b>	<b>21,643</b>	<b>23,447</b>	<b>21,365</b>	<b>25,238</b>	<b>21,513</b>	<b>11,586</b>	<b>12,477</b>	<b>17,031</b>	<b>444,055</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	3,926	3,775	3,775	3,926	3,624	4,077	1,812	1,963	3,926	3,926	3,775	1,963	2,114	3,624	46,204
14 Investor Owned Utilities	1,840	46,495	49,232	49,224	45,499	23,325	11,747	12,726	2,197	1,706	2,746	1,098	1,182	1,550	250,566
<b>15 Total Regional Contracts Out</b>	<b>5,766</b>	<b>50,270</b>	<b>53,007</b>	<b>53,150</b>	<b>49,123</b>	<b>27,402</b>	<b>13,559</b>	<b>14,689</b>	<b>6,123</b>	<b>5,632</b>	<b>6,521</b>	<b>3,061</b>	<b>3,296</b>	<b>5,174</b>	<b>296,770</b>
<b>Intra-Regional Contracts In</b>															
16 Investor Owned Utilities	10,446	7,808	5,016	8,723	4,857	14,187	8,085	8,758	15,243	19,606	14,992	8,525	9,181	11,858	147,285
<b>17 Total Regional Contracts In</b>	<b>10,446</b>	<b>7,808</b>	<b>5,016</b>	<b>8,723</b>	<b>4,857</b>	<b>14,187</b>	<b>8,085</b>	<b>8,758</b>	<b>15,243</b>	<b>19,606</b>	<b>14,992</b>	<b>8,525</b>	<b>9,181</b>	<b>11,858</b>	<b>147,285</b>

**Table 2.3.2**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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>16,681</b>	<b>58,073</b>	<b>58,023</b>	<b>61,873</b>	<b>51,954</b>	<b>29,248</b>	<b>15,306</b>	<b>15,306</b>	<b>7,837</b>	<b>8,241</b>	<b>8,974</b>	<b>3,811</b>	<b>4,104</b>	<b>7,016</b>	<b>346,447</b>
1 BPA-P to AVWP Setl WNP3 Del	0	41,573	45,072	45,072	41,605	22,519	11,242	11,242	0	0	0	0	0	0	218,326
2 BPA-P to BPA-T Ops IntrlAgmt	4,077	3,775	3,775	3,926	3,624	3,926	1,963	1,963	3,926	3,775	3,926	1,963	2,114	3,624	46,355
3 BPA-P to PPL NSP RIn	1,843	2,117	1,360	1,240	1,206	806	998	998	2,205	1,706	2,760	1,102	1,186	1,550	21,078
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	2,800	2,800	2,912	2,688	0	0	0	0	0	0	0	0	0	11,200
7 BPA-P to PSE Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Other Entities to BPA-P	8,644	6,448	3,776	7,517	2,026	0	0	0	0	0	0	0	0	0	28,411
9 PPL to BPA-P NSP SOut	2,117	1,360	1,240	1,206	806	1,997	1,102	1,102	1,706	2,760	2,288	746	804	1,843	21,077
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>16,681</b>	<b>58,073</b>	<b>58,023</b>	<b>61,873</b>	<b>51,954</b>	<b>29,248</b>	<b>15,306</b>	<b>15,306</b>	<b>7,837</b>	<b>8,241</b>	<b>8,974</b>	<b>3,811</b>	<b>4,104</b>	<b>7,016</b>	<b>346,447</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	4,077	3,775	3,775	3,926	3,624	3,926	1,963	1,963	3,926	3,775	3,926	1,963	2,114	3,624	46,355
14 Investor Owned Utilities	1,843	46,490	49,232	49,224	45,499	23,325	12,241	12,241	2,205	1,706	2,760	1,102	1,186	1,550	250,604
<b>15 Total Regional Contracts Out</b>	<b>5,920</b>	<b>50,265</b>	<b>53,007</b>	<b>53,150</b>	<b>49,123</b>	<b>27,251</b>	<b>14,204</b>	<b>14,204</b>	<b>6,131</b>	<b>5,481</b>	<b>6,686</b>	<b>3,064</b>	<b>3,300</b>	<b>5,174</b>	<b>296,958</b>
<b>Intra-Regional Contracts In</b>															
16 Investor Owned Utilities	10,761	7,808	5,016	8,723	2,832	1,997	1,102	1,102	1,706	2,760	2,288	746	804	1,843	49,488
<b>17 Total Regional Contracts In</b>	<b>10,761</b>	<b>7,808</b>	<b>5,016</b>	<b>8,723</b>	<b>2,832</b>	<b>1,997</b>	<b>1,102</b>	<b>1,102</b>	<b>1,706</b>	<b>2,760</b>	<b>2,288</b>	<b>746</b>	<b>804</b>	<b>1,843</b>	<b>49,488</b>

**Table 2.3.3**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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>13,113</b>	<b>51,606</b>	<b>49,247</b>	<b>48,406</b>	<b>40,460</b>	<b>31,622</b>	<b>17,705</b>	<b>16,019</b>	<b>17,450</b>	<b>20,653</b>	<b>19,905</b>	<b>9,066</b>	<b>9,543</b>	<b>14,369</b>	<b>359,163</b>
1 BPA-P to AVWP Setl WNP3 Del	0	39,739	38,941	38,941	34,309	18,958	9,285	8,401	0	0	0	0	0	0	188,574
2 BPA-P to BPA-T Ops IntrAgmt	3,095	3,029	3,246	3,095	2,718	2,935	1,585	1,434	3,095	2,869	3,246	1,434	1,510	3,171	36,465
3 BPA-P to PPL NSP RIn	1,440	1,706	1,380	1,170	656	806	735	665	1,546	1,870	1,976	821	865	1,518	17,154
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	7	7	7	7	0	0	0	0	0	0	0	0	0	28
7 BPA-P to PSE Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Other Entities to BPA-P	6,872	5,744	4,503	4,536	1,964	7,522	5,288	4,784	10,939	13,938	12,996	6,071	6,390	8,235	99,784
9 PPL to BPA-P NSP SOut	1,706	1,380	1,170	656	806	1,400	812	734	1,870	1,976	1,686	739	778	1,445	17,159
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>13,113</b>	<b>51,606</b>	<b>49,247</b>	<b>48,406</b>	<b>40,460</b>	<b>31,622</b>	<b>17,705</b>	<b>16,019</b>	<b>17,450</b>	<b>20,653</b>	<b>19,905</b>	<b>9,066</b>	<b>9,543</b>	<b>14,369</b>	<b>359,163</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	3,095	3,029	3,246	3,095	2,718	2,935	1,585	1,434	3,095	2,869	3,246	1,434	1,510	3,171	36,465
14 Investor Owned Utilities	1,440	41,452	40,328	40,118	34,972	19,764	10,020	9,066	1,546	1,870	1,976	821	865	1,518	205,756
<b>15 Total Regional Contracts Out</b>	<b>4,535</b>	<b>44,482</b>	<b>43,574</b>	<b>43,213</b>	<b>37,690</b>	<b>22,699</b>	<b>11,606</b>	<b>10,500</b>	<b>4,641</b>	<b>4,739</b>	<b>5,222</b>	<b>2,256</b>	<b>2,375</b>	<b>4,689</b>	<b>242,221</b>
<b>Intra-Regional Contracts In</b>															
16 Investor Owned Utilities	8,578	7,124	5,673	5,192	2,770	8,923	6,100	5,519	12,809	15,914	14,682	6,810	7,169	9,680	116,942
<b>17 Total Regional Contracts In</b>	<b>8,578</b>	<b>7,124</b>	<b>5,673</b>	<b>5,192</b>	<b>2,770</b>	<b>8,923</b>	<b>6,100</b>	<b>5,519</b>	<b>12,809</b>	<b>15,914</b>	<b>14,682</b>	<b>6,810</b>	<b>7,169</b>	<b>9,680</b>	<b>116,942</b>

**Table 2.3.3**  
**Bonneville Power Administration - Power Services: Intra-Regional Transfers**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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>12,611</b>	<b>51,584</b>	<b>49,247</b>	<b>48,406</b>	<b>39,478</b>	<b>24,256</b>	<b>11,756</b>	<b>11,756</b>	<b>6,515</b>	<b>6,874</b>	<b>6,785</b>	<b>3,005</b>	<b>3,163</b>	<b>6,134</b>	<b>281,570</b>
1 BPA-P to AVWP Setl WNP3 Del	0	39,739	38,941	38,941	34,309	18,958	8,843	8,843	0	0	0	0	0	0	188,575
2 BPA-P to BPA-T Ops IntrlAgmt	2,944	3,029	3,246	3,095	2,718	3,086	1,434	1,434	3,095	3,020	3,095	1,434	1,510	3,171	36,314
3 BPA-P to PPL NSP RIn	1,445	1,685	1,380	1,170	656	806	703	703	1,550	1,870	1,984	831	875	1,518	17,176
4 BPA-P to PPL SNX SprgDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA-P to PPL SNX SumrDel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA-P to PSE Ops UBkr Repl	0	7	7	7	7	0	0	0	0	0	0	0	0	0	28
7 BPA-P to PSE Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Other Entities to BPA-P	6,536	5,744	4,503	4,536	982	0	0	0	0	0	0	0	0	0	22,302
9 PPL to BPA-P NSP SOut	1,685	1,380	1,170	656	806	1,406	775	775	1,870	1,984	1,706	739	778	1,445	17,176
10 PPL to BPA-P SNX SprgRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 PPL to BPA-P SNX SumrRtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>12 Total Intra-Regional Transfers</b>	<b>12,611</b>	<b>51,584</b>	<b>49,247</b>	<b>48,406</b>	<b>39,478</b>	<b>24,256</b>	<b>11,756</b>	<b>11,756</b>	<b>6,515</b>	<b>6,874</b>	<b>6,785</b>	<b>3,005</b>	<b>3,163</b>	<b>6,134</b>	<b>281,570</b>
<b>Intra-Regional Contracts Out</b>															
13 Federal Entities	2,944	3,029	3,246	3,095	2,718	3,086	1,434	1,434	3,095	3,020	3,095	1,434	1,510	3,171	36,314
14 Investor Owned Utilities	1,445	41,431	40,328	40,118	34,972	19,764	9,546	9,546	1,550	1,870	1,984	831	875	1,518	205,779
<b>15 Total Regional Contracts Out</b>	<b>4,389</b>	<b>44,460</b>	<b>43,574</b>	<b>43,213</b>	<b>37,690</b>	<b>22,850</b>	<b>10,980</b>	<b>10,980</b>	<b>4,645</b>	<b>4,890</b>	<b>5,079</b>	<b>2,266</b>	<b>2,385</b>	<b>4,689</b>	<b>242,092</b>
<b>Intra-Regional Contracts In</b>															
16 Investor Owned Utilities	8,222	7,124	5,673	5,192	1,788	1,406	775	775	1,870	1,984	1,706	739	778	1,445	39,478
<b>17 Total Regional Contracts In</b>	<b>8,222</b>	<b>7,124</b>	<b>5,673</b>	<b>5,192</b>	<b>1,788</b>	<b>1,406</b>	<b>775</b>	<b>775</b>	<b>1,870</b>	<b>1,984</b>	<b>1,706</b>	<b>739</b>	<b>778</b>	<b>1,445</b>	<b>39,478</b>

**Table 2.4.1**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	17.8	17.9	17.3	18.0	17.7	18.0	16.5	17.9	18.0	17.9	17.3	17.9	18.1	17.2	17.7
2 CHPD to BPA CEAEA for Rocky Reach	36.6	37.5	36.3	37.7	37.1	37.8	34.7	37.6	37.7	37.6	36.3	37.6	37.9	36.1	37.1
3 DOPD to BPA CEAEA for Wells	23.5	24.2	23.5	24.4	24.0	23.9	22.4	24.3	24.4	24.3	23.5	24.3	24.5	23.3	23.9
4 GCPD to BPA CEAEA for Priest Rapids	28.5	29.4	28.5	29.8	29.7	30.2	27.2	29.5	29.6	29.5	28.5	29.5	29.8	28.3	29.2
5 GCPD to BPA CEAEA for Wanpum	27.8	28.8	28.0	29.0	28.6	29.1	26.1	28.3	28.5	28.3	27.4	28.3	28.6	27.2	28.2
<b>6 Total Imports From PNW</b>	<b>134</b>	<b>138</b>	<b>134</b>	<b>139</b>	<b>137</b>	<b>139</b>	<b>127</b>	<b>138</b>	<b>138</b>	<b>138</b>	<b>133</b>	<b>138</b>	<b>139</b>	<b>132</b>	<b>136</b>
<b>Total Imports</b>															
7 Federal Entities	134	138	134	139	137	139	127	138	138	138	133	138	139	132	136
<b>8 Total Imports</b>	<b>134</b>	<b>138</b>	<b>134</b>	<b>139</b>	<b>137</b>	<b>139</b>	<b>127</b>	<b>138</b>	<b>138</b>	<b>138</b>	<b>133</b>	<b>138</b>	<b>139</b>	<b>132</b>	<b>136</b>



**Table 2.4.1**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	18.1	18.5	17.9	18.6	18.3	17.9	18.5	18.5	18.6	17.8	18.6	18.5	18.7	17.8	18.3
2 CHPD to BPA CEAEA for Rocky Reach	37.7	37.5	36.3	38.3	37.7	37.0	38.1	38.1	38.3	36.7	38.3	38.1	38.5	36.7	37.6
3 DOPD to BPA CEAEA for Wells	24.4	24.2	23.4	23.8	23.4	23.0	23.7	23.7	23.8	22.8	23.8	23.7	23.9	22.8	23.6
4 GCPD to BPA CEAEA for Priest Rapids	29.6	29.4	28.5	29.6	29.1	28.3	28.9	28.9	29.0	27.8	29.0	28.9	29.2	27.8	28.8
5 GCPD to BPA CEAEA for Wanpum	28.5	28.3	27.5	29.0	28.6	28.0	28.9	28.9	29.0	27.8	29.0	28.9	29.2	27.8	28.4
<b>6 Total Imports From PNW</b>	<b>138</b>	<b>138</b>	<b>134</b>	<b>139</b>	<b>137</b>	<b>134</b>	<b>138</b>	<b>138</b>	<b>139</b>	<b>133</b>	<b>139</b>	<b>138</b>	<b>139</b>	<b>133</b>	<b>137</b>
<b>Total Imports</b>															
7 Federal Entities	138	138	134	139	137	134	138	138	139	133	139	138	139	133	137
<b>8 Total Imports</b>	<b>138</b>	<b>138</b>	<b>134</b>	<b>139</b>	<b>137</b>	<b>134</b>	<b>138</b>	<b>138</b>	<b>139</b>	<b>133</b>	<b>139</b>	<b>138</b>	<b>139</b>	<b>133</b>	<b>137</b>

**Table 2.4.2**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	13,240	12,400	12,400	12,896	11,904	13,392	5,952	6,448	12,896	12,896	12,400	6,448	6,944	11,904	152,120
2 CHPD to BPA CEAEA for Rocky Reach	27,224	26,000	26,000	27,040	24,960	28,080	12,480	13,520	27,040	27,040	26,000	13,520	14,560	24,960	318,424
3 DOPD to BPA CEAEA for Wells	17,472	16,800	16,800	17,472	16,128	17,787	8,064	8,736	17,472	17,472	16,800	8,736	9,408	16,128	205,275
4 GCPD to BPA CEAEA for Priest Rapids	21,216	20,400	20,400	21,338	19,968	22,464	9,792	10,608	21,216	21,216	20,400	10,608	11,424	19,584	250,634
5 GCPD to BPA CEAEA for Wanpum	20,696	20,000	20,000	20,800	19,200	21,600	9,408	10,192	20,384	20,384	19,600	10,192	10,976	18,816	242,248
<b>6 Total Imports From PNW</b>	<b>99,848</b>	<b>95,600</b>	<b>95,600</b>	<b>99,546</b>	<b>92,160</b>	<b>103,323</b>	<b>45,696</b>	<b>49,504</b>	<b>99,008</b>	<b>99,008</b>	<b>95,200</b>	<b>49,504</b>	<b>53,312</b>	<b>91,392</b>	<b>1,168,701</b>
<b>Total Imports</b>															
7 Federal Entities	99,848	95,600	95,600	99,546	92,160	103,323	45,696	49,504	99,008	99,008	95,200	49,504	53,312	91,392	1,168,701
<b>8 Total Imports</b>	<b>99,848</b>	<b>95,600</b>	<b>95,600</b>	<b>99,546</b>	<b>92,160</b>	<b>103,323</b>	<b>45,696</b>	<b>49,504</b>	<b>99,008</b>	<b>99,008</b>	<b>95,200</b>	<b>49,504</b>	<b>53,312</b>	<b>91,392</b>	<b>1,168,701</b>

**Table 2.4.2**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	13,468	12,800	12,800	13,312	12,288	13,312	6,656	6,656	13,312	12,800	13,312	6,656	7,168	12,288	156,828
2 CHPD to BPA CEAEA for Rocky Reach	28,080	26,000	26,000	27,456	25,344	27,456	13,728	13,728	27,456	26,400	27,456	13,728	14,784	25,344	322,960
3 DOPD to BPA CEAEA for Wells	18,144	16,800	16,737	17,056	15,744	17,056	8,528	8,528	17,056	16,400	17,056	8,528	9,184	15,744	202,561
4 GCPD to BPA CEAEA for Priest Rapids	22,032	20,400	20,400	21,216	19,584	21,006	10,400	10,400	20,800	20,000	20,800	10,400	11,200	19,200	247,838
5 GCPD to BPA CEAEA for Wanpum	21,168	19,600	19,645	20,800	19,200	20,800	10,400	10,400	20,800	20,000	20,800	10,400	11,200	19,200	244,413
<b>6 Total Imports From PNW</b>	<b>102,892</b>	<b>95,600</b>	<b>95,582</b>	<b>99,840</b>	<b>92,160</b>	<b>99,630</b>	<b>49,712</b>	<b>49,712</b>	<b>99,424</b>	<b>95,600</b>	<b>99,424</b>	<b>49,712</b>	<b>53,536</b>	<b>91,776</b>	<b>1,174,600</b>
<b>Total Imports</b>															
7 Federal Entities	102,892	95,600	95,582	99,840	92,160	99,630	49,712	49,712	99,424	95,600	99,424	49,712	53,536	91,776	1,174,600
<b>8 Total Imports</b>	<b>102,892</b>	<b>95,600</b>	<b>95,582</b>	<b>99,840</b>	<b>92,160</b>	<b>99,630</b>	<b>49,712</b>	<b>49,712</b>	<b>99,424</b>	<b>95,600</b>	<b>99,424</b>	<b>49,712</b>	<b>53,536</b>	<b>91,776</b>	<b>1,174,600</b>

**Table 2.4.3**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

LLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	0	496	496	496	0	0	0	0	496	0	496	0	0	496	2,976
2 CHPD to BPA CEAEA for Rocky Reach	0	1,040	1,040	1,040	0	0	0	0	1,040	0	1,040	0	0	1,040	6,240
3 DOPD to BPA CEAEA for Wells	0	672	672	672	0	0	0	0	672	0	672	0	0	672	4,032
4 GCPD to BPA CEAEA for Priest Rapids	0	816	816	816	0	0	0	0	816	0	816	0	0	816	4,896
5 GCPD to BPA CEAEA for Wanpum	0	800	800	800	0	0	0	0	784	0	784	0	0	784	4,752
<b>6 Total Imports From PNW</b>	<b>0</b>	<b>3,824</b>	<b>3,824</b>	<b>3,824</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,808</b>	<b>0</b>	<b>3,808</b>	<b>0</b>	<b>0</b>	<b>3,808</b>	<b>22,896</b>
<b>Total Imports</b>															
7 Federal Entities	0	3,824	3,824	3,824	0	0	0	0	3,808	0	3,808	0	0	3,808	22,896
<b>8 Total Imports</b>	<b>0</b>	<b>3,824</b>	<b>3,824</b>	<b>3,824</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,808</b>	<b>0</b>	<b>3,808</b>	<b>0</b>	<b>0</b>	<b>3,808</b>	<b>22,896</b>

**Table 2.4.3**  
**Non-Federal CER Deliveries to BPA**  
**Fiscal Year: 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

LLH-MWh	A Oct	B Nov	C Dec	D Jan	E Feb	F Mar	G Apr1	H Apr16	I May	J Jun	K Jul	L Aug1	M Aug16	N Sep	O Sum
<b>Pacific Northwest</b>															
1 CHPD to BPA CEAEA for Rock Island	0	512	512	512	0	0	0	0	512	0	512	0	0	512	3,072
2 CHPD to BPA CEAEA for Rocky Reach	0	1,040	1,040	1,045	0	0	0	0	1,056	0	1,056	0	0	1,056	6,293
3 DOPD to BPA CEAEA for Wells	0	672	672	656	0	0	0	0	656	0	656	0	0	656	3,968
4 GCPD to BPA CEAEA for Priest Rapids	0	816	816	816	0	0	0	0	800	0	800	0	0	800	4,848
5 GCPD to BPA CEAEA for Wanpum	0	784	784	800	0	0	0	0	800	0	800	0	0	800	4,768
<b>6 Total Imports From PNW</b>	<b>0</b>	<b>3,824</b>	<b>3,824</b>	<b>3,829</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,824</b>	<b>0</b>	<b>3,824</b>	<b>0</b>	<b>0</b>	<b>3,824</b>	<b>22,949</b>
<b>Total Imports</b>															
7 Federal Entities	0	3,824	3,824	3,829	0	0	0	0	3,824	0	3,824	0	0	3,824	22,949
<b>8 Total Imports</b>	<b>0</b>	<b>3,824</b>	<b>3,824</b>	<b>3,829</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,824</b>	<b>0</b>	<b>3,824</b>	<b>0</b>	<b>0</b>	<b>3,824</b>	<b>22,949</b>

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**3. HYDRO RESOURCE FORECASTS FOR FY 2018 AND FY 2019.....37**

**Table 3.1.1**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
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	29.8	23.7	15.7	13.4	14.4	14.5	6.39	22.7	38.7	43.6	35.7	23.9	20.6	24.7	24.3	
2 Bonneville	420	542	540	440	480	488	366	216	415	341	136	183	138	436	390	
3 Chief Joseph	928	1312	1239	922	986	924	917	1180	1517	1177	1056	1451	1199	948	1116	
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	1644	2328	2141	1571	1707	1578	1508	1877	2387	1981	1873	2567	2083	1654	1908	
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	107	103	120	115	123	173	67.3	65.7	172	77.3	66.1	66.7	66.9	97.1	107	
8 John Day	677	926	896	701	770	814	794	755	971	864	633	746	618	701	784	
9 Libby	92.9	265	173	86.5	85.8	85.1	84.6	84.6	441	390	167	170	170	169	184	
10 Little Goose	108	106	120	119	111	169	156	188	342	258	149	111	123	110	157	
11 Lower Granite	102	102	119	117	110	168	82.4	134	356	239	91.3	80.3	135	115	145	
12 Lower Monumental	112	107	124	120	130	182	85.4	124	347	239	99.2	84.5	85.8	104	146	
13 McNary	460	597	577	456	501	508	460	419	593	487	313	355	292	481	477	
14 The Dalles	538	723	728	572	631	649	597	519	702	625	445	497	411	563	598	
<b>Total Regulated Hydro</b>																
15 Federal Entities	5,359	7,279	6,937	5,378	5,795	5,897	5,249	5,672	8,393	6,952	5,615	6,884	5,793	5,690	6,259	
<b>16 Total Regulated Hydro</b>	<b>5,359</b>	<b>7,279</b>	<b>6,937</b>	<b>5,378</b>	<b>5,795</b>	<b>5,897</b>	<b>5,249</b>	<b>5,672</b>	<b>8,393</b>	<b>6,952</b>	<b>5,615</b>	<b>6,884</b>	<b>5,793</b>	<b>5,690</b>	<b>6,259</b>	



**Table 3.1.1**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	29.8	23.7	15.7	13.4	14.4	14.5	6.39	22.7	30.8	30.3	18.1	17.2	17.0	17.4	20.0
2 Bonneville	420	542	540	441	480	488	366	216	415	341	136	183	138	436	390
3 Chief Joseph	928	1312	1239	922	985	924	917	1180	1517	1177	1056	1451	1199	948	1116
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	1644	2328	2141	1572	1706	1578	1508	1877	2387	1981	1873	2567	2083	1654	1908
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	107	103	120	115	123	173	67.3	65.7	172	77.3	66.1	66.7	66.9	97.1	107
8 John Day	677	926	896	701	769	814	794	755	971	864	633	746	618	701	784
9 Libby	92.9	265	173	86.5	85.8	85.1	84.6	84.6	441	390	167	170	170	169	184
10 Little Goose	108	106	120	119	111	169	156	188	342	258	149	111	123	110	157
11 Lower Granite	102	102	119	117	110	168	82.4	134	357	239	91.3	80.3	135	115	145
12 Lower Monumental	112	107	124	120	130	182	85.4	124	347	239	99.2	84.5	85.8	104	146
13 McNary	460	597	577	456	501	508	460	419	593	487	313	355	292	481	477
14 The Dalles	538	723	728	573	630	649	597	519	702	625	445	497	411	563	598
<b>Total Regulated Hydro</b>															
15 Federal Entities	5,359	7,279	6,937	5,381	5,791	5,897	5,249	5,672	8,386	6,938	5,597	6,877	5,790	5,682	6,255
<b>16 Total Regulated Hydro</b>	<b>5,359</b>	<b>7,279</b>	<b>6,937</b>	<b>5,381</b>	<b>5,791</b>	<b>5,897</b>	<b>5,249</b>	<b>5,672</b>	<b>8,386</b>	<b>6,938</b>	<b>5,597</b>	<b>6,877</b>	<b>5,790</b>	<b>5,682</b>	<b>6,255</b>

**Table 3.1.2**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	12,687	9,373	6,402	5,436	5,546	6,174	1,314	4,659	16,450	17,917	14,530	4,918	4,527	9,756	119,690
2 Bonneville	179,297	211,020	217,125	179,242	184,020	206,660	85,492	43,823	184,338	135,247	60,594	39,813	32,188	169,915	1,928,773
3 Chief Joseph	507,720	658,455	634,208	452,124	451,141	468,033	226,892	317,118	813,240	621,258	608,863	413,478	330,696	502,808	7,006,034
4 Dworshak	26,061	24,087	24,716	24,609	23,164	25,601	12,454	12,677	28,683	69,925	179,279	90,241	75,182	70,874	687,552
5 Grand Coulee	899,323	1,168,482	1,095,689	770,472	781,261	799,420	373,002	504,220	1,279,394	1,045,229	1,079,690	731,676	574,684	876,993	11,979,535
6 Hungry Horse	33,605	33,116	34,421	34,937	32,735	35,358	13,046	5,322	18,359	24,026	44,849	22,529	23,890	42,514	398,708
7 Ice Harbor	50,607	45,869	66,341	62,584	62,384	87,842	15,627	14,312	76,050	33,062	28,589	13,854	15,812	42,967	615,900
8 John Day	330,856	430,172	421,476	334,146	347,142	398,401	189,979	177,673	480,615	408,804	292,078	176,235	148,993	330,269	4,466,839
9 Libby	39,477	104,665	70,371	35,182	32,944	36,149	17,409	17,398	187,651	160,332	68,025	34,918	37,230	66,495	908,248
10 Little Goose	51,366	47,129	66,529	64,841	56,410	85,561	36,278	41,048	150,742	110,608	64,296	23,038	29,167	48,597	875,610
11 Lower Granite	48,595	45,676	65,997	63,932	55,939	84,904	19,137	29,214	157,173	102,435	39,437	16,684	31,966	50,889	811,979
12 Lower Monumental	53,027	47,741	68,950	65,431	65,628	92,370	19,827	27,119	153,022	102,395	42,868	17,567	20,284	46,053	822,283
13 McNary	224,748	277,554	271,415	217,277	225,981	248,554	109,997	98,624	293,277	230,478	144,411	83,912	70,356	226,388	2,722,972
14 The Dalles	262,904	335,935	342,373	272,824	284,445	318,033	142,889	122,253	347,478	296,003	205,117	117,498	99,105	264,871	3,411,729
<b>Total Regulated Hydro</b>															
15 Federal Entities	2,720,272	3,439,275	3,386,014	2,583,037	2,608,741	2,893,061	1,263,344	1,415,460	4,186,472	3,357,718	2,872,626	1,786,361	1,494,080	2,749,389	36,755,851
<b>16 Total Regulated Hydro</b>	<b>2,720,272</b>	<b>3,439,275</b>	<b>3,386,014</b>	<b>2,583,037</b>	<b>2,608,741</b>	<b>2,893,061</b>	<b>1,263,344</b>	<b>1,415,460</b>	<b>4,186,472</b>	<b>3,357,718</b>	<b>2,872,626</b>	<b>1,786,361</b>	<b>1,494,080</b>	<b>2,749,389</b>	<b>36,755,851</b>

**Table 3.1.2**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	12,687	9,373	6,402	5,436	5,546	6,174	1,317	4,659	12,522	12,474	7,390	3,546	3,726	6,846	98,098
2 Bonneville	179,140	211,180	217,304	179,170	183,774	206,662	85,126	44,339	175,947	139,880	60,490	40,166	31,686	171,019	1,925,882
3 Chief Joseph	509,446	663,656	635,265	452,855	452,550	476,367	228,073	318,006	805,016	632,794	605,706	414,760	332,621	506,032	7,033,147
4 Dworshak	26,061	24,087	24,716	24,609	23,164	25,601	12,477	12,677	27,466	69,924	179,279	90,241	75,182	70,874	686,357
5 Grand Coulee	902,380	1,177,712	1,097,516	771,687	783,633	813,654	374,944	505,632	1,266,456	1,064,638	1,074,092	733,945	578,029	882,615	12,026,934
6 Hungry Horse	33,605	33,116	34,421	34,937	32,735	35,358	13,069	5,322	17,581	24,025	44,849	22,529	23,890	42,514	397,952
7 Ice Harbor	50,702	45,821	66,341	62,611	62,384	88,113	15,627	14,312	73,015	33,062	28,589	13,854	15,701	42,967	613,099
8 John Day	332,400	437,306	430,465	337,336	347,697	406,653	189,598	177,071	471,499	421,496	293,358	177,118	148,822	331,787	4,502,605
9 Libby	39,477	104,665	70,371	35,182	32,944	36,149	17,440	17,398	179,693	160,329	68,025	34,918	37,230	66,495	900,319
10 Little Goose	51,463	47,079	66,529	64,869	56,410	85,825	36,278	41,048	144,726	110,608	64,296	23,038	28,962	48,597	869,728
11 Lower Granite	48,686	45,628	65,997	63,959	55,939	85,166	19,137	29,214	151,063	102,435	39,437	16,684	31,741	50,889	805,977
12 Lower Monumental	53,127	47,691	68,950	65,459	65,628	92,655	19,827	27,119	146,915	102,395	42,868	17,567	20,141	46,053	816,397
13 McNary	225,797	282,157	277,204	219,353	226,340	253,702	109,777	98,290	287,714	237,634	145,044	84,332	70,275	227,429	2,745,047
14 The Dalles	264,131	341,507	349,674	275,421	284,909	324,620	142,603	121,839	340,887	305,193	206,016	118,087	98,991	266,089	3,439,967
<b>Total Regulated Hydro</b>															
15 Federal Entities	2,729,103	3,470,979	3,411,155	2,592,885	2,613,654	2,936,698	1,265,292	1,416,926	4,100,501	3,416,887	2,859,438	1,790,785	1,496,998	2,760,206	36,861,509
<b>16 Total Regulated Hydro</b>	<b>2,729,103</b>	<b>3,470,979</b>	<b>3,411,155</b>	<b>2,592,885</b>	<b>2,613,654</b>	<b>2,936,698</b>	<b>1,265,292</b>	<b>1,416,926</b>	<b>4,100,501</b>	<b>3,416,887</b>	<b>2,859,438</b>	<b>1,790,785</b>	<b>1,496,998</b>	<b>2,760,206</b>	<b>36,861,509</b>

**Table 3.1.3**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	9,515	7,726	5,289	4,507	4,160	4,630	986	3,495	12,338	13,458	12,003	3,689	3,395	8,060	93,249
2 Bonneville	133,368	179,666	184,695	148,374	138,805	156,108	46,436	33,770	124,542	110,311	40,683	26,114	20,791	144,096	1,487,760
3 Chief Joseph	182,756	287,579	287,777	233,656	211,379	218,439	103,356	107,804	315,623	226,496	176,970	108,810	129,580	179,958	2,770,181
4 Dworshak	19,546	19,855	20,417	20,404	17,373	19,201	9,341	9,508	21,512	52,521	148,100	67,681	56,387	58,548	540,392
5 Grand Coulee	323,715	510,332	497,177	398,177	366,054	373,103	169,913	171,409	496,539	381,065	313,819	192,546	225,184	313,881	4,732,916
6 Hungry Horse	25,204	27,297	28,435	28,967	24,551	26,519	9,784	3,992	13,769	18,046	37,050	16,897	17,917	35,120	313,548
7 Ice Harbor	28,765	28,244	22,654	22,655	20,391	41,067	8,595	9,329	52,194	22,563	20,627	10,143	9,875	26,912	324,014
8 John Day	172,626	237,215	245,094	187,228	170,008	206,096	95,840	93,972	241,941	212,996	179,071	92,325	88,262	174,739	2,397,412
9 Libby	29,608	86,274	58,133	29,170	24,708	27,111	13,057	13,049	140,738	120,427	56,195	26,189	27,923	54,931	707,512
10 Little Goose	29,197	29,019	22,719	23,472	18,438	40,000	19,953	26,755	103,456	75,486	46,389	16,867	18,215	30,439	500,405
11 Lower Granite	27,622	28,125	22,537	23,143	18,284	39,694	10,526	19,042	107,869	69,908	28,454	12,215	19,963	31,874	459,255
12 Lower Monumental	30,141	29,397	23,545	23,686	21,451	43,184	10,905	17,676	105,021	69,881	30,929	12,862	12,667	28,846	460,190
13 McNary	117,263	153,055	157,831	121,744	110,671	128,579	55,491	52,162	147,635	120,085	88,537	43,959	41,678	119,777	1,458,469
14 The Dalles	137,171	185,249	199,094	152,868	139,303	164,521	72,085	64,660	174,920	154,224	125,756	61,554	58,708	140,138	1,830,252
<b>Total Regulated Hydro</b>															
15 Federal Entities	1,266,497	1,809,035	1,775,397	1,418,049	1,285,577	1,488,253	626,265	626,621	2,058,097	1,647,465	1,304,582	691,851	730,546	1,347,320	18,075,555
<b>16 Total Regulated Hydro</b>	<b>1,266,497</b>	<b>1,809,035</b>	<b>1,775,397</b>	<b>1,418,049</b>	<b>1,285,577</b>	<b>1,488,253</b>	<b>626,265</b>	<b>626,621</b>	<b>2,058,097</b>	<b>1,647,465</b>	<b>1,304,582</b>	<b>691,851</b>	<b>730,546</b>	<b>1,347,320</b>	<b>18,075,555</b>

**Table 3.1.3**  
**Bonneville Power Administration - Power Services: Regulated Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	9,515	7,726	5,289	4,507	4,160	4,630	983	3,495	10,362	9,370	6,105	2,659	2,794	5,655	77,251
2 Bonneville	133,526	179,506	184,516	148,619	138,883	156,106	46,801	33,254	132,933	105,678	40,787	25,762	21,294	142,992	1,490,654
3 Chief Joseph	181,030	282,378	286,719	233,461	209,436	210,106	102,175	106,916	323,846	214,960	180,127	107,528	127,655	176,735	2,743,071
4 Dworshak	19,546	19,855	20,417	20,404	17,373	19,201	9,318	9,508	22,728	52,522	148,100	67,681	56,387	58,548	541,587
5 Grand Coulee	320,658	501,103	495,351	397,830	362,658	358,869	167,971	169,997	509,477	361,657	319,417	190,277	221,839	308,258	4,685,362
6 Hungry Horse	25,204	27,297	28,435	28,967	24,551	26,519	9,761	3,992	14,548	18,046	37,050	16,897	17,917	35,120	314,303
7 Ice Harbor	28,670	28,292	22,654	22,628	20,391	40,796	8,595	9,329	55,229	22,563	20,627	10,143	9,986	26,912	326,815
8 John Day	171,081	230,081	236,105	184,356	169,134	197,845	96,221	94,574	251,057	200,304	177,792	91,442	88,433	173,220	2,361,645
9 Libby	29,608	86,274	58,133	29,170	24,708	27,111	13,025	13,049	148,696	120,429	56,195	26,189	27,923	54,931	715,441
10 Little Goose	29,100	29,069	22,719	23,444	18,438	39,736	19,953	26,755	109,472	75,486	46,389	16,867	18,420	30,439	506,287
11 Lower Granite	27,530	28,173	22,537	23,116	18,284	39,432	10,526	19,042	114,264	69,908	28,454	12,215	20,187	31,874	465,542
12 Lower Monumental	30,041	29,447	23,545	23,658	21,451	42,899	10,905	17,676	111,127	69,881	30,929	12,862	12,810	28,846	466,077
13 McNary	116,214	148,452	152,043	119,878	110,101	123,431	55,712	52,497	153,198	112,929	87,905	43,539	41,759	118,736	1,436,394
14 The Dalles	135,944	179,678	191,792	150,519	138,592	157,934	72,371	65,074	181,511	145,034	124,857	60,965	58,822	138,920	1,802,016
<b>Total Regulated Hydro</b>															
15 Federal Entities	1,257,666	1,777,331	1,750,255	1,410,557	1,278,161	1,444,616	624,317	625,156	2,138,449	1,578,765	1,304,732	685,025	726,226	1,331,188	17,932,444
<b>16 Total Regulated Hydro</b>	<b>1,257,666</b>	<b>1,777,331</b>	<b>1,750,255</b>	<b>1,410,557</b>	<b>1,278,161</b>	<b>1,444,616</b>	<b>624,317</b>	<b>625,156</b>	<b>2,138,449</b>	<b>1,578,765</b>	<b>1,304,732</b>	<b>685,025</b>	<b>726,226</b>	<b>1,331,188</b>	<b>17,932,444</b>

**Table 3.2.1**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 Idaho Falls - City Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Idaho Falls - Lower Plant #1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Idaho Falls - Lower Plant #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Idaho Falls - Upper Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 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
19 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
20 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
21 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
22 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>															
23 Federal Entities	307	257	172	113	128	230	435	442	719	708	407	373	373	318	348
<b>24 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 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 Idaho Falls - City Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Idaho Falls - Lower Plant #1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Idaho Falls - Lower Plant #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Idaho Falls - Upper Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 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
19 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
20 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
21 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
22 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>															
23 Federal Entities	307	257	172	113	128	230	435	442	719	708	407	373	373	318	348
<b>24 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 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	4,511	5,190	2,578	1,608	2,243	2,523	1,671	3,023	8,297	8,137	2,827	1,215	1,308	3,857	48,988
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	0	0	0	0	0	0	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	11,091	9,302	3,485	2,663	2,378	5,602	5,568	6,032	12,064	12,064	6,663	5,270	5,232	6,226	93,640
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	4,756	12,139	14,952	12,575	23,131	47,840	47,840	22,544	8,876	9,406	30,450	313,888
9 Dexter	5,148	6,288	1,520	1,402	1,814	2,040	2,253	2,563	6,865	6,918	2,382	982	1,094	4,359	45,629
10 Foster	2,700	3,025	5,216	1,728	3,530	9,003	4,328	4,784	9,568	9,568	2,466	1,167	1,151	2,601	60,835
11 Green Peter	8,045	7,735	22,568	3,215	143	24,457	17,856	16,111	38,688	35,117	3,829	944	3,342	8,477	190,527
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	9,467	10,749	1,946	1,597	1,764	2,244	5,322	6,511	14,560	14,560	5,554	1,641	1,604	10,087	87,606
14 Idaho Falls - City Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Idaho Falls - Lower Plant #1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Idaho Falls - Lower Plant #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Idaho Falls - Upper Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Lookout Point	33,644	34,103	3,510	3,240	4,418	6,361	16,120	18,196	57,408	53,994	18,021	3,981	4,410	32,708	290,114
19 Lost Creek	15,411	7,600	7,505	7,694	4,993	5,869	2,809	3,258	23,462	23,462	18,551	9,206	8,770	9,126	147,717
20 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
21 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
22 Roza	1,679	0	1,647	1,090	1,200	3,998	2,359	2,359	4,546	4,523	4,314	2,206	2,353	0	32,273
<b>Total Independent Hydro</b>															
23 Federal Entities	157,432	134,201	88,794	49,282	55,944	117,108	100,112	116,256	341,808	341,544	186,536	81,158	86,780	153,434	2,010,390
<b>24 Total Independent Hydro</b>	<b>157,432</b>	<b>134,201</b>	<b>88,794</b>	<b>49,282</b>	<b>55,944</b>	<b>117,108</b>	<b>100,112</b>	<b>116,256</b>	<b>341,808</b>	<b>341,544</b>	<b>186,536</b>	<b>81,158</b>	<b>86,780</b>	<b>153,434</b>	<b>2,010,390</b>



**Table 3.2.2**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	5,190	2,578	1,608	2,243	2,430	1,810	3,023	8,297	7,824	2,940	1,215	1,308	3,857	49,008
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	0	0	0	0	0	0	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	9,302	3,485	2,663	2,378	5,394	6,032	6,032	12,064	11,600	6,929	5,270	5,232	6,226	94,125
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	4,756	12,139	14,952	12,575	23,131	47,840	46,000	22,544	8,876	9,406	30,450	312,048
9 Dexter	5,346	6,288	1,520	1,402	1,814	1,965	2,441	2,563	6,865	6,652	2,477	982	1,094	4,359	45,769
10 Foster	2,804	3,025	5,216	1,728	3,530	8,669	4,689	4,784	9,568	9,200	2,565	1,167	1,151	2,601	60,697
11 Green Peter	8,354	7,735	22,568	3,215	143	24,457	19,344	16,111	38,688	35,117	3,982	944	3,342	8,477	192,477
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	10,749	1,946	1,597	1,764	2,161	5,766	6,511	14,560	14,000	5,776	1,641	1,604	10,087	87,992
14 Idaho Falls - City Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Idaho Falls - Lower Plant #1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Idaho Falls - Lower Plant #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Idaho Falls - Upper Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Lookout Point	33,644	34,103	3,510	3,240	4,418	6,125	16,120	18,196	57,408	53,994	18,021	3,981	4,410	32,708	289,878
19 Lost Creek	16,004	7,600	7,505	7,694	4,993	5,651	3,043	3,258	23,462	22,560	19,293	9,206	8,770	9,126	148,166
20 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
21 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
22 Roza	1,679	0	1,647	1,090	1,200	3,998	2,359	2,359	4,546	4,523	4,314	2,206	2,353	0	32,273
<b>Total Independent Hydro</b>															
23 Federal Entities	159,600	134,201	88,794	49,282	55,944	115,862	103,429	116,256	341,808	336,831	188,227	81,158	86,780	153,434	2,011,607
<b>24 Total Independent Hydro</b>	<b>159,600</b>	<b>134,201</b>	<b>88,794</b>	<b>49,282</b>	<b>55,944</b>	<b>115,862</b>	<b>103,429</b>	<b>116,256</b>	<b>341,808</b>	<b>336,831</b>	<b>188,227</b>	<b>81,158</b>	<b>86,780</b>	<b>153,434</b>	<b>2,011,607</b>

**Table 3.2.3**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	3,557	4,165	2,217	1,268	1,682	1,816	1,462	2,209	6,542	5,946	2,431	888	934	3,375	38,493
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	0	0	0	0	0	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	8,745	7,465	2,997	2,100	1,784	4,033	4,872	4,408	9,512	8,816	5,730	3,851	3,737	5,448	73,497
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	0	0	0	3,750	0	0	0	0	30,952	17,497	0	0	0	0	52,199
9 Dexter	4,059	5,046	1,307	1,106	1,360	1,469	1,972	1,873	5,413	5,055	2,048	718	781	3,814	36,022
10 Foster	2,129	2,428	4,486	1,362	2,647	6,481	3,787	3,496	7,544	6,992	2,121	853	822	2,276	47,424
11 Green Peter	6,343	6,208	0	2,535	108	0	13,994	0	4,400	0	3,293	689	2,387	7,417	47,374
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	7,464	8,626	1,673	1,259	1,323	1,615	4,657	4,758	11,480	10,640	4,776	1,199	1,146	8,826	69,444
14 Idaho Falls - City Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Idaho Falls - Lower Plant #1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Idaho Falls - Lower Plant #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Idaho Falls - Upper Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Lookout Point	0	0	3,019	2,555	3,314	4,579	0	0	7,128	0	0	2,909	3,150	0	26,653
19 Lost Creek	12,151	6,099	6,454	6,067	3,745	4,225	2,458	2,381	18,499	17,146	15,954	6,727	6,264	7,986	116,155
20 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
21 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
22 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>															
23 Federal Entities	70,906	50,945	39,222	35,091	30,206	54,083	56,561	42,961	193,205	168,397	116,127	53,062	56,328	75,179	1,042,272
<b>24 Total Independent Hydro</b>	<b>70,906</b>	<b>50,945</b>	<b>39,222</b>	<b>35,091</b>	<b>30,206</b>	<b>54,083</b>	<b>56,561</b>	<b>42,961</b>	<b>193,205</b>	<b>168,397</b>	<b>116,127</b>	<b>53,062</b>	<b>56,328</b>	<b>75,179</b>	<b>1,042,272</b>

**Table 3.2.3**  
**Bonneville Power Administration - Power Services: Independent Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	4,165	2,217	1,268	1,682	1,910	1,323	2,209	6,542	6,259	2,318	888	934	3,375	38,474
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	0	0	0	0	0	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	7,465	2,997	2,100	1,784	4,240	4,408	4,408	9,512	9,280	5,464	3,851	3,737	5,448	73,011
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	0	0	0	3,750	0	0	0	0	30,952	19,337	0	0	0	0	54,039
9 Dexter	3,861	5,046	1,307	1,106	1,360	1,544	1,784	1,873	5,413	5,322	1,953	718	781	3,814	35,883
10 Foster	2,025	2,428	4,486	1,362	2,647	6,815	3,426	3,496	7,544	7,360	2,022	853	822	2,276	47,563
11 Green Peter	6,034	6,208	0	2,535	108	0	12,506	0	4,400	0	3,140	689	2,387	7,417	45,424
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	8,626	1,673	1,259	1,323	1,698	4,213	4,758	11,480	11,200	4,554	1,199	1,146	8,826	69,057
14 Idaho Falls - City Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Idaho Falls - Lower Plant #1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Idaho Falls - Lower Plant #2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Idaho Falls - Upper Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Lookout Point	0	0	3,019	2,555	3,314	4,815	0	0	7,128	0	0	2,909	3,150	0	26,888
19 Lost Creek	11,559	6,099	6,454	6,067	3,745	4,442	2,224	2,381	18,499	18,048	15,212	6,727	6,264	7,986	115,706
20 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
21 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
22 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>															
23 Federal Entities	68,738	50,945	39,222	35,091	30,206	55,329	53,243	42,961	193,205	173,110	114,436	53,062	56,328	75,179	1,041,055
<b>24 Total Independent Hydro</b>	<b>68,738</b>	<b>50,945</b>	<b>39,222</b>	<b>35,091</b>	<b>30,206</b>	<b>55,329</b>	<b>53,243</b>	<b>42,961</b>	<b>193,205</b>	<b>173,110</b>	<b>114,436</b>	<b>53,062</b>	<b>56,328</b>	<b>75,179</b>	<b>1,041,055</b>

**Table 3.3.1**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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 3.3.1**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	1,094	1,052	1,052	1,094	1,010	1,136	505	547	1,094	1,094	1,052	547	589	1,010	12,876
2 Rocky Brook	19	88	239	247	162	199	95	95	85	36	1	1	1	0	1,268
<b>Total Small Hydro</b>															
3 Federal Entities	1,113	1,140	1,291	1,341	1,172	1,335	600	642	1,179	1,130	1,053	548	590	1,010	14,144
<b>4 Total Small Hydro</b>	<b>1,113</b>	<b>1,140</b>	<b>1,291</b>	<b>1,341</b>	<b>1,172</b>	<b>1,335</b>	<b>600</b>	<b>642</b>	<b>1,179</b>	<b>1,130</b>	<b>1,053</b>	<b>548</b>	<b>590</b>	<b>1,010</b>	<b>14,144</b>

**Table 3.3.2**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	1,010	1,094	547	547	1,094	1,052	1,094	547	589	1,010	12,919
2 Rocky Brook	19	88	239	247	162	199	95	95	85	36	1	1	1	0	1,268
<b>Total Small Hydro</b>															
3 Federal Entities	1,155	1,140	1,291	1,341	1,172	1,293	642	642	1,179	1,088	1,095	548	590	1,010	14,187
<b>4 Total Small Hydro</b>	<b>1,155</b>	<b>1,140</b>	<b>1,291</b>	<b>1,341</b>	<b>1,172</b>	<b>1,293</b>	<b>642</b>	<b>642</b>	<b>1,179</b>	<b>1,088</b>	<b>1,095</b>	<b>548</b>	<b>590</b>	<b>1,010</b>	<b>14,187</b>

**Table 3.3.3**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	863	844	905	863	757	818	442	400	863	800	905	400	421	884	10,162
2 Rocky Brook	14	61	175	181	121	149	70	70	67	26	1	0	0	0	935
<b>Total Small Hydro</b>															
3 Federal Entities	877	905	1,080	1,044	878	967	512	470	930	826	906	400	421	884	11,097
<b>4 Total Small Hydro</b>	<b>877</b>	<b>905</b>	<b>1,080</b>	<b>1,044</b>	<b>878</b>	<b>967</b>	<b>512</b>	<b>470</b>	<b>930</b>	<b>826</b>	<b>906</b>	<b>400</b>	<b>421</b>	<b>884</b>	<b>11,097</b>



**Table 3.3.3**  
**Bonneville Power Administration - Power Services: Small Hydro**  
**Fiscal Year 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	757	860	400	400	863	842	863	400	421	884	10,120
2 Rocky Brook	14	61	175	181	121	149	70	70	67	26	1	0	0	0	935
<b>Total Small Hydro</b>															
3 Federal Entities	835	905	1,080	1,044	878	1,009	470	470	930	868	864	400	421	884	11,055
<b>4 Total Small Hydro</b>	<b>835</b>	<b>905</b>	<b>1,080</b>	<b>1,044</b>	<b>878</b>	<b>1,009</b>	<b>470</b>	<b>470</b>	<b>930</b>	<b>868</b>	<b>864</b>	<b>400</b>	<b>421</b>	<b>884</b>	<b>11,055</b>

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**4. OTHER RESOURCE FORECASTS FOR FY 2018 AND FY 2019 .....57**

**Table 4.1.1**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
<b>Total Large Thermal Resources</b>															
3 Federal Entities	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
<b>4 Total</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>

**Table 4.1.1**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	355	0	994	1,100	1,100	1,100	937
<b>Total Large Thermal Resources</b>															
3 Federal Entities	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	355	0	994	1,100	1,100	1,100	937
<b>4 Total</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>355</b>	<b>0</b>	<b>994</b>	<b>1,100</b>	<b>1,100</b>	<b>1,100</b>	<b>937</b>

**Table 4.1.2**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

HLH-MWh	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	457,600	440,000	440,000	457,600	422,400	475,200	211,200	228,800	457,600	457,600	440,000	228,800	246,400	422,400	5,385,600
<b>Total Large Thermal Resources</b>															
3 Federal Entities	457,600	440,000	440,000	457,600	422,400	475,200	211,200	228,800	457,600	457,600	440,000	228,800	246,400	422,400	5,385,600
<b>4 Total</b>	<b>457,600</b>	<b>440,000</b>	<b>440,000</b>	<b>457,600</b>	<b>422,400</b>	<b>475,200</b>	<b>211,200</b>	<b>228,800</b>	<b>457,600</b>	<b>457,600</b>	<b>440,000</b>	<b>228,800</b>	<b>246,400</b>	<b>422,400</b>	<b>5,385,600</b>

**Table 4.1.2**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	475,200	440,000	440,000	457,600	422,400	457,600	228,800	228,800	147,613	0	413,316	228,800	246,400	422,400	4,608,929
<b>Total Large Thermal Resources</b>															
3 Federal Entities	475,200	440,000	440,000	457,600	422,400	457,600	228,800	228,800	147,613	0	413,316	228,800	246,400	422,400	4,608,929
<b>4 Total</b>	<b>475,200</b>	<b>440,000</b>	<b>440,000</b>	<b>457,600</b>	<b>422,400</b>	<b>457,600</b>	<b>228,800</b>	<b>228,800</b>	<b>147,613</b>	<b>0</b>	<b>413,316</b>	<b>228,800</b>	<b>246,400</b>	<b>422,400</b>	<b>4,608,929</b>

**Table 4.1.3**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

LLH-MWh	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	360,800	353,100	378,400	360,800	316,800	342,100	184,800	167,200	360,800	334,400	378,400	167,200	176,000	369,600	4,250,400
<b>Total Large Thermal Resources</b>															
3 Federal Entities	360,800	353,100	378,400	360,800	316,800	342,100	184,800	167,200	360,800	334,400	378,400	167,200	176,000	369,600	4,250,400
<b>4 Total</b>	<b>360,800</b>	<b>353,100</b>	<b>378,400</b>	<b>360,800</b>	<b>316,800</b>	<b>342,100</b>	<b>184,800</b>	<b>167,200</b>	<b>360,800</b>	<b>334,400</b>	<b>378,400</b>	<b>167,200</b>	<b>176,000</b>	<b>369,600</b>	<b>4,250,400</b>



**Table 4.1.3**  
**Bonneville Power Administration - Power Services: Large Thermal Resources**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

LLH-MWh	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Large Thermal Resources</b>															
1 Columbia Generating Station	343,200	353,100	378,400	360,800	316,800	359,700	167,200	167,200	116,387	0	325,884	167,200	176,000	369,600	3,601,471
<b>Total Large Thermal Resources</b>															
3 Federal Entities	343,200	353,100	378,400	360,800	316,800	359,700	167,200	167,200	116,387	0	325,884	167,200	176,000	369,600	3,601,471
<b>4 Total</b>	<b>343,200</b>	<b>353,100</b>	<b>378,400</b>	<b>360,800</b>	<b>316,800</b>	<b>359,700</b>	<b>167,200</b>	<b>167,200</b>	<b>116,387</b>	<b>0</b>	<b>325,884</b>	<b>167,200</b>	<b>176,000</b>	<b>369,600</b>	<b>3,601,471</b>

**Table 4.2.1**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	0.01	0.00	0.00	0.00	0.00
2 City Council	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 Public Works	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6 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
7 Condon 1	4.44	6.36	4.85	2.59	4.29	4.93	8.82	7.42	7.93	7.84	7.67	3.96	5.94	5.52	5.79
8 Condon 2	4.54	6.51	4.96	2.65	4.39	5.05	9.03	7.60	8.13	8.04	7.85	4.06	6.08	5.65	5.93
9 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
11 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	3.96
13 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 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
17 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
19 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
20 Stateline-OR	6.55	9.38	7.15	3.83	6.33	7.28	13.0	10.9	11.7	11.6	11.3	5.84	8.77	8.15	8.55
21 Stateline-WA	9.69	13.9	10.6	5.66	9.37	10.8	19.3	16.2	17.3	17.1	16.8	8.66	13.0	12.1	12.7
<b>Total Renewable Resources</b>															
22 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>23 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 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	0.01	0.00	0.00	0.00	0.00
2 City Council	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5 Public Works	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6 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
7 Condon 1	4.44	6.36	4.85	2.59	4.29	4.93	8.82	7.42	7.93	7.84	7.67	3.96	5.94	5.52	5.79
8 Condon 2	4.54	6.51	4.96	2.65	4.39	5.05	9.03	7.60	8.13	8.04	7.85	4.06	6.08	5.65	5.93
9 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
11 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	3.96
13 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 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
17 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
19 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
20 Stateline-OR	6.55	9.38	7.15	3.83	6.33	7.28	13.0	10.9	11.7	11.6	11.3	5.84	8.77	8.15	8.55
21 Stateline-WA	9.69	13.9	10.6	5.66	9.37	10.8	19.3	16.2	17.3	17.1	16.8	8.66	13.0	12.1	12.7
<b>Total Renewable Resources</b>															
22 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>23 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 4.2.2**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	1.90	1.23	1.26	1.26	1.43	1.90	1.07	1.07	2.85	2.75	3.16	1.38	1.47	2.75	25.5
2 City Council	0.32	0.31	0.32	0.32	0.29	0.32	0.15	0.15	0.32	0.31	0.32	0.15	0.16	0.31	3.72
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.32	0.31	0.32	0.32	0.29	0.32	0.15	0.15	0.63	0.61	0.63	0.31	0.33	0.61	5.28
5 Public Works	1.27	0.61	0.63	0.63	0.86	1.26	0.77	0.77	1.90	1.84	2.21	0.92	0.98	1.84	16.5
6 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
7 Condon 1	1,775	2,035	1,828	1,006	1,789	2,172	1,910	1,610	3,300	3,236	3,161	758	1,296	2,372	28,248
8 Condon 2	1,818	2,084	1,872	1,031	1,832	2,224	1,957	1,649	3,380	3,315	3,237	777	1,327	2,430	28,935
9 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
11 Foote Creek 4 Wind	1,212	1,390	1,248	687	1,222	1,483	1,305	1,100	2,253	2,210	2,159	518	885	1,620	19,291
13 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 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
17 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
19 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	103,448
20 Stateline-OR	2,621	3,004	2,698	1,486	2,641	3,206	2,820	2,377	4,871	4,778	4,666	1,119	1,912	3,502	41,700
21 Stateline-WA	3,881	4,448	3,995	2,200	3,911	4,747	4,176	3,520	7,213	7,074	6,909	1,658	2,832	5,186	61,748
<b>Total Renewable Resources</b>															
22 Federal Entities	17,761	20,356	18,284	10,068	17,898	21,725	19,112	16,108	33,012	32,378	31,621	7,587	12,961	23,736	282,607
<b>23 Total</b>	<b>17,761</b>	<b>20,356</b>	<b>18,284</b>	<b>10,068</b>	<b>17,898</b>	<b>21,725</b>	<b>19,112</b>	<b>16,108</b>	<b>33,012</b>	<b>32,378</b>	<b>31,621</b>	<b>7,587</b>	<b>12,961</b>	<b>23,736</b>	<b>282,607</b>

**Table 4.2.2**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	1.90	0.92	1.26	1.26	1.43	1.90	1.07	1.07	2.85	2.75	3.16	1.38	1.47	2.75	25.2
2 City Council	0.32	0	0.32	0.32	0.29	0.32	0.15	0.15	0.32	0.31	0.32	0.15	0.16	0.31	3.42
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.32	0.31	0.32	0.32	0.29	0.32	0.15	0.15	0.63	0.61	0.63	0.31	0.33	0.61	5.28
5 Public Works	1.27	0.61	0.63	0.63	0.86	1.26	0.77	0.77	1.90	1.84	2.21	0.92	0.98	1.84	16.5
6 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
7 Condon 1	1,775	2,035	1,828	1,006	1,789	2,172	1,910	1,610	3,300	3,236	3,161	758	1,296	2,372	28,248
8 Condon 2	1,818	2,084	1,872	1,031	1,832	2,224	1,957	1,649	3,380	3,315	3,237	777	1,327	2,430	28,935
9 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
11 Foote Creek 4 Wind	1,212	1,390	1,248	687	1,222	1,483	1,305	1,100	2,253	2,210	2,159	518	885	1,620	19,291
13 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 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
17 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
19 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	103,448
20 Stateline-OR	2,621	3,004	2,698	1,486	2,641	3,206	2,820	2,377	4,871	4,778	4,666	1,119	1,912	3,502	41,700
21 Stateline-WA	3,881	4,448	3,995	2,200	3,911	4,747	4,176	3,520	7,213	7,074	6,909	1,658	2,832	5,186	61,748
<b>Total Renewable Resources</b>															
22 Federal Entities	17,761	20,356	18,284	10,068	17,898	21,725	19,112	16,108	33,012	32,378	31,621	7,587	12,961	23,736	282,607
<b>23 Total</b>	<b>17,761</b>	<b>20,356</b>	<b>18,284</b>	<b>10,068</b>	<b>17,898</b>	<b>21,725</b>	<b>19,112</b>	<b>16,108</b>	<b>33,012</b>	<b>32,378</b>	<b>31,621</b>	<b>7,587</b>	<b>12,961</b>	<b>23,736</b>	<b>282,607</b>

**Table 4.2.3**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

LLH-MWh	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
<b>Renewable Resources</b>															
1 Ashland Solar Project	0.34	0.22	0.22	0.22	0.25	0.33	0.19	0.19	0.50	0.49	0.56	0.24	0.26	0.49	4.50
2 City Council	0.06	0.05	0.06	0.06	0.05	0.06	0.03	0.03	0.06	0.05	0.06	0.03	0.03	0.05	0.66
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.06	0.05	0.06	0.06	0.05	0.06	0.03	0.03	0.11	0.11	0.11	0.05	0.06	0.11	0.93
5 Public Works	0.22	0.11	0.11	0.11	0.15	0.22	0.14	0.14	0.34	0.32	0.39	0.16	0.17	0.32	2.91
6 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
7 Condon 1	1,524	2,548	1,777	921	1,092	1,490	1,263	1,060	2,603	2,412	2,545	667	985	1,602	22,490
8 Condon 2	1,562	2,610	1,820	944	1,118	1,527	1,294	1,086	2,666	2,470	2,606	683	1,009	1,640	23,036
9 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
11 Foote Creek 4 Wind	1,041	1,740	1,214	629	746	1,018	863	724	1,778	1,647	1,738	456	673	1,094	15,359
13 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 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
17 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
19 Stateline Wind	5,583	9,331	6,508	3,375	3,998	5,458	4,625	3,882	9,533	8,832	9,318	2,443	3,608	5,865	82,360
20 Stateline-OR	2,250	3,761	2,623	1,360	1,612	2,200	1,864	1,565	3,843	3,560	3,756	985	1,455	2,364	33,200
21 Stateline-WA	3,332	5,570	3,885	2,014	2,387	3,258	2,761	2,317	5,690	5,272	5,562	1,458	2,154	3,501	49,161
<b>Total Renewable Resources</b>															
22 Federal Entities	15,251	25,489	17,778	9,218	10,922	14,910	12,635	10,605	26,042	24,127	25,455	6,674	9,857	16,021	224,983
<b>23 Total</b>	<b>15,251</b>	<b>25,489</b>	<b>17,778</b>	<b>9,218</b>	<b>10,922</b>	<b>14,910</b>	<b>12,635</b>	<b>10,605</b>	<b>26,042</b>	<b>24,127</b>	<b>25,455</b>	<b>6,674</b>	<b>9,857</b>	<b>16,021</b>	<b>224,983</b>

**Table 4.2.3**  
**Bonneville Power Administration - Power Services: Renewable Resources**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case** Report Date: 6/1/2017  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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	0.34	0.52	0.22	0.22	0.25	0.33	0.19	0.19	0.50	0.49	0.56	0.24	0.26	0.49	4.80
2 City Council	0.06	0.36	0.06	0.06	0.05	0.06	0.03	0.03	0.06	0.05	0.06	0.03	0.03	0.05	0.96
3 N. Mountain Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Police Station	0.06	0.05	0.06	0.06	0.05	0.06	0.03	0.03	0.11	0.11	0.11	0.05	0.06	0.11	0.93
5 Public Works	0.22	0.11	0.11	0.11	0.15	0.22	0.14	0.14	0.34	0.32	0.39	0.16	0.17	0.32	2.91
6 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
7 Condon 1	1,524	2,548	1,777	921	1,092	1,490	1,263	1,060	2,603	2,412	2,545	667	985	1,602	22,490
8 Condon 2	1,562	2,610	1,820	944	1,118	1,527	1,294	1,086	2,666	2,470	2,606	683	1,009	1,640	23,036
9 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
11 Foote Creek 4 Wind	1,041	1,740	1,214	629	746	1,018	863	724	1,778	1,647	1,738	456	673	1,094	15,359
13 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 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
17 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
19 Stateline Wind	5,583	9,331	6,508	3,375	3,998	5,458	4,625	3,882	9,533	8,832	9,318	2,443	3,608	5,865	82,360
20 Stateline-OR	2,250	3,761	2,623	1,360	1,612	2,200	1,864	1,565	3,843	3,560	3,756	985	1,455	2,364	33,200
21 Stateline-WA	3,332	5,570	3,885	2,014	2,387	3,258	2,761	2,317	5,690	5,272	5,562	1,458	2,154	3,501	49,161
<b>Total Renewable Resources</b>															
22 Federal Entities	15,251	25,490	17,778	9,218	10,922	14,910	12,635	10,605	26,042	24,127	25,455	6,674	9,857	16,021	224,984
<b>23 Total</b>	<b>15,251</b>	<b>25,490</b>	<b>17,778</b>	<b>9,218</b>	<b>10,922</b>	<b>14,910</b>	<b>12,635</b>	<b>10,605</b>	<b>26,042</b>	<b>24,127</b>	<b>25,455</b>	<b>6,674</b>	<b>9,857</b>	<b>16,021</b>	<b>224,984</b>

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**5. FEDERAL REGULATED HYDRO FORECASTS**  
**BY WATER YEAR FROM HYDSIM.....71**

**Table 5.1.1**  
**BP 18 Final Proposal Federal Regulated Hydro Generation**  
**Fiscal Year 2018**  
**Energy-aMW**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR 15	APR 30	MAY	JUNE	JULY	AUG 15	AUG 30	SEP	AVG.
1	1929	5,243	6,812	6,895	6,732	6,177	6,162	4,914	7,104	7,659	7,732	5,182	6,592	5,826	5,903	6,391
2	1930	5,439	7,089	6,847	5,645	6,444	5,966	6,129	8,121	7,075	5,045	7,199	7,088	5,980	5,835	6,352
3	1931	5,452	7,215	7,180	6,241	5,163	5,560	5,766	4,886	8,166	5,469	7,019	7,027	6,095	5,554	6,254
4	1932	5,327	6,664	6,997	5,039	5,098	7,646	10,734	12,089	12,629	11,909	8,557	7,396	7,178	6,346	7,911
5	1933	5,247	6,148	8,661	10,404	10,126	9,303	7,401	8,266	10,034	13,482	11,067	9,441	8,368	6,012	8,930
6	1934	6,156	9,887	13,293	13,849	12,769	13,078	12,183	12,094	10,798	10,332	7,710	6,254	5,735	5,684	10,125
7	1935	5,350	5,743	6,696	10,016	9,469	9,001	6,042	8,610	9,500	9,006	9,549	8,853	6,235	5,197	7,861
8	1936	5,338	6,812	6,520	5,414	6,181	6,302	6,280	10,784	12,533	11,447	7,638	6,823	5,885	5,636	7,390
9	1937	5,313	7,229	6,889	5,334	5,750	5,852	5,206	5,624	8,341	6,901	5,567	6,834	5,746	5,645	6,212
10	1938	5,296	6,773	7,817	9,189	9,529	9,310	9,718	12,599	11,790	10,310	8,904	6,151	5,554	6,022	8,486
11	1939	5,238	6,652	6,642	7,903	7,259	6,824	7,544	9,827	9,761	6,920	7,255	6,752	5,810	5,920	7,110
12	1940	5,397	7,382	7,130	8,237	7,036	10,116	7,951	8,992	9,472	6,759	6,959	6,108	5,391	5,766	7,377
13	1941	5,213	6,998	7,526	6,412	6,422	6,308	5,129	6,600	8,767	6,917	6,963	7,010	5,994	6,045	6,664
14	1942	5,229	7,604	8,523	9,762	8,616	8,141	6,158	8,618	9,399	9,600	9,671	7,581	6,873	6,637	8,149
15	1943	5,313	5,962	7,168	10,453	9,611	9,594	12,394	13,060	10,956	13,473	11,453	8,511	6,763	5,425	9,139
16	1944	5,078	6,846	6,811	6,867	6,629	5,811	4,815	6,726	6,741	4,993	5,963	7,051	5,693	5,618	6,124
17	1945	5,266	6,944	7,133	5,801	5,884	5,807	4,906	4,129	10,260	10,846	5,820	6,527	5,777	5,577	6,669
18	1946	5,136	6,881	7,655	8,832	8,601	9,054	10,632	12,879	11,967	10,362	10,220	7,927	7,155	6,128	8,676
19	1947	5,089	6,932	11,309	12,008	11,149	10,506	9,060	9,550	11,985	10,855	9,707	7,687	6,607	5,854	9,316
20	1948	8,087	8,500	9,664	11,621	9,824	9,165	8,128	11,179	13,185	13,434	10,779	9,929	8,822	6,499	9,987
21	1949	5,658	6,632	7,924	9,117	8,111	10,320	9,090	11,765	12,580	10,626	6,402	6,130	5,150	5,521	8,246
22	1950	5,062	6,576	7,368	11,514	11,617	10,430	10,923	10,519	10,818	13,244	12,134	9,906	8,670	6,269	9,573
23	1951	6,345	8,890	11,430	13,482	13,223	13,443	11,430	11,470	11,998	10,684	10,665	8,589	6,612	5,915	10,415
24	1952	7,450	7,648	9,663	11,348	10,256	9,199	11,064	13,367	13,349	11,202	9,375	7,609	6,207	5,093	9,474
25	1953	5,199	6,598	6,600	8,124	9,186	8,130	6,527	7,894	10,277	13,721	11,469	8,618	7,223	5,964	8,358
26	1954	5,583	6,944	8,793	11,116	10,793	10,450	8,319	9,521	11,720	12,463	12,048	10,343	10,020	8,635	9,802
27	1955	5,688	7,884	8,936	7,838	7,564	6,021	5,794	7,664	9,763	13,404	11,749	9,556	7,553	5,711	8,322
28	1956	5,861	8,376	11,353	12,995	12,614	12,023	10,526	12,975	13,073	13,147	10,802	9,402	8,196	5,986	10,560
29	1957	5,811	6,605	9,015	9,434	8,062	8,687	10,118	9,186	13,826	13,886	8,564	7,090	6,379	5,928	8,854
30	1958	5,127	6,919	6,848	9,745	9,049	8,981	7,793	10,202	12,766	12,673	7,973	7,483	6,157	5,556	8,447
31	1959	5,433	7,666	10,772	12,497	12,071	11,233	9,834	9,233	10,839	12,715	11,254	9,515	8,714	9,183	10,181
32	1960	9,140	9,934	10,702	10,515	9,354	8,924	13,081	11,016	9,363	11,527	9,580	7,904	6,161	5,532	9,466
33	1961	5,559	6,803	8,217	10,032	10,095	11,099	8,783	8,882	11,626	12,900	8,402	7,622	6,414	5,656	8,845
34	1962	4,983	6,825	7,727	9,491	9,249	6,876	11,017	12,870	10,890	9,941	8,478	7,518	6,824	5,350	8,231
35	1963	6,141	7,855	10,318	10,832	9,395	8,237	6,192	8,075	10,103	10,028	9,285	7,467	6,418	6,230	8,541
36	1964	5,104	6,550	8,175	7,965	7,797	6,976	9,243	7,775	10,699	13,424	11,602	9,498	8,386	6,884	8,552
37	1965	6,427	7,491	11,573	13,844	14,325	12,534	7,893	13,105	12,456	11,132	9,471	8,939	8,266	5,613	10,315
38	1966	5,868	6,865	8,594	8,913	8,585	7,229	11,089	8,826	8,572	9,605	9,420	8,409	6,215	5,652	8,041
39	1967	5,208	6,532	8,813	11,838	11,263	10,784	7,562	5,737	10,220	13,110	10,992	8,732	7,604	6,132	9,135
40	1968	5,691	7,193	8,583	10,876	10,046	9,699	5,867	7,200	8,319	11,880	9,885	8,568	7,407	7,607	8,687

**Table 5.1.1**  
**BP 18 Final Proposal Federal Regulated Hydro Generation**  
**Fiscal Year 2018**  
**Energy-aMW**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR 15	APR 30	MAY	JUNE	JULY	AUG 15	AUG 30	SEP	AVG.
41	1969	6,610	8,511	9,689	12,603	12,934	10,951	10,961	12,905	12,832	11,560	9,664	7,233	6,323	5,699	9,961
42	1970	5,613	7,034	7,278	9,581	8,892	8,291	6,748	7,719	10,631	12,797	7,248	7,106	6,057	5,611	8,057
43	1971	5,161	6,641	7,860	12,970	14,289	12,181	10,629	11,565	12,955	13,410	11,518	9,632	9,301	6,215	10,291
44	1972	5,847	6,761	8,804	12,757	13,153	13,710	12,631	10,071	12,708	12,996	11,430	10,029	9,592	6,464	10,479
45	1973	5,812	6,899	8,331	9,356	7,507	6,656	4,107	6,744	8,595	6,056	6,919	6,606	5,678	5,672	6,952
46	1974	5,302	6,409	9,402	14,588	13,782	13,459	11,395	12,749	12,301	12,968	12,253	9,769	9,564	6,347	10,701
47	1975	5,020	6,830	7,076	9,718	9,635	9,213	6,519	7,699	11,434	13,376	12,245	8,655	7,937	6,583	8,875
48	1976	6,662	8,866	12,560	12,498	11,907	12,203	11,720	11,178	13,045	11,756	11,033	10,680	10,691	9,727	11,034
49	1977	5,893	6,956	6,967	7,171	6,986	6,103	4,427	6,066	6,377	4,794	6,051	6,998	5,761	5,038	6,162
50	1978	4,799	6,827	8,254	9,313	9,165	8,171	10,839	9,520	11,367	9,294	9,567	7,059	6,089	7,766	8,432
51	1979	6,035	6,976	6,936	8,564	6,778	8,400	5,981	8,302	11,181	8,600	5,584	6,626	5,848	5,867	7,364
52	1980	5,274	6,926	6,382	7,772	6,987	6,515	7,866	9,762	12,699	11,931	8,168	6,429	5,826	5,968	7,794
53	1981	5,252	6,845	10,257	12,174	11,404	8,293	4,644	8,054	10,376	13,495	10,556	9,768	8,556	6,140	9,183
54	1982	5,468	7,250	8,382	10,816	13,858	13,401	10,657	10,155	12,517	13,347	12,304	9,628	9,188	7,372	10,357
55	1983	6,503	7,248	9,053	11,582	11,645	11,941	9,350	9,170	11,550	11,734	11,214	9,733	7,767	6,440	9,737
56	1984	5,644	9,198	9,462	10,727	10,767	9,921	11,323	12,089	11,623	12,925	10,884	9,035	6,969	6,435	9,763
57	1985	5,631	7,101	8,410	8,881	8,032	7,281	8,830	10,246	10,620	8,317	6,924	5,938	5,049	5,790	7,664
58	1986	5,027	8,538	8,722	10,475	10,867	13,078	11,478	12,168	10,164	10,808	8,200	6,858	5,915	5,385	9,107
59	1987	4,925	7,006	8,567	8,195	6,748	7,927	5,420	7,599	10,315	8,270	6,046	6,180	5,268	5,504	7,150
60	1988	5,299	6,973	6,415	6,278	5,409	6,286	5,220	7,430	8,208	6,445	7,313	6,888	5,899	5,562	6,414
61	1989	5,140	7,109	7,429	6,918	6,182	7,762	7,813	12,374	10,241	8,693	6,677	6,347	5,637	5,601	7,322
62	1990	5,338	7,107	9,088	10,133	10,324	9,845	7,590	11,685	9,306	11,708	9,101	8,649	7,802	5,546	8,769
63	1991	5,045	8,938	10,071	11,509	10,693	10,545	9,200	8,798	10,347	11,362	11,025	9,725	7,953	5,523	9,403
64	1992	5,408	6,832	6,465	7,579	7,240	8,326	4,534	6,658	8,222	6,033	6,121	6,510	5,579	5,380	6,606
65	1993	5,444	7,173	7,052	6,009	5,307	6,923	6,438	8,002	10,905	9,591	7,242	6,953	6,175	5,797	7,112
66	1994	5,319	7,359	7,357	5,643	6,059	5,938	5,204	7,371	9,443	8,363	7,003	6,635	5,592	5,776	6,723
67	1995	5,397	6,484	6,999	8,348	8,832	9,480	6,813	7,750	9,883	11,987	8,645	6,877	6,118	6,319	8,005
68	1996	6,268	10,151	14,245	14,177	13,873	14,273	10,997	13,138	12,395	11,821	11,105	9,489	7,954	5,984	11,254
69	1997	5,478	6,979	9,607	14,359	14,441	13,671	11,445	13,160	12,907	13,188	11,473	9,312	9,401	7,345	10,908
70	1998	8,367	8,387	8,401	9,096	8,876	8,025	7,361	8,944	13,115	13,019	9,404	8,090	6,349	5,471	8,962
71	1999	5,174	6,203	9,269	12,604	12,571	12,422	9,026	10,940	10,890	12,930	11,472	10,344	9,484	6,504	9,984
72	2000	5,485	9,524	10,333	9,977	9,667	8,983	10,589	12,478	11,162	8,027	8,946	7,833	5,657	5,265	8,799
73	2001	5,238	6,796	6,909	6,864	6,630	6,260	4,758	6,373	7,488	4,176	6,269	7,045	5,608	5,064	6,134
74	2002	4,701	6,919	7,076	6,617	6,633	7,020	7,360	10,991	9,901	12,693	10,394	7,387	6,324	5,856	7,819
75	2003	5,475	7,230	7,074	6,583	6,125	8,374	7,469	8,678	9,842	11,323	6,870	6,264	5,221	5,230	7,330
76	2004	5,294	7,522	7,651	7,764	6,426	7,603	6,604	7,994	9,495	8,364	7,338	6,766	6,222	6,828	7,342
77	2005	5,945	6,858	8,836	9,167	8,719	6,673	4,984	7,478	10,365	9,053	7,885	7,013	5,620	5,708	7,643
78	2006	4,859	6,972	8,381	10,445	10,639	9,405	11,426	12,434	12,641	12,433	8,587	6,472	5,811	5,253	8,957
79	2007	5,416	7,177	7,698	9,915	9,127	9,787	9,669	8,603	10,195	9,776	9,036	6,747	5,566	5,138	8,208
80	2008	5,500	7,369	6,699	7,454	7,504	7,072	6,852	5,713	11,600	13,590	9,654	7,694	7,557	5,281	7,970
<b>AVERAGE</b>	<b>5,608</b>	<b>7,284</b>	<b>8,428</b>	<b>9,556</b>	<b>9,210</b>	<b>9,039</b>	<b>8,251</b>	<b>9,497</b>	<b>10,701</b>	<b>10,626</b>	<b>9,026</b>	<b>7,868</b>	<b>6,837</b>	<b>6,027</b>	<b>8,474</b>	

**Table 5.1.1**  
**BP 18 Final Proposal Federal Regulated Hydro Generation**  
**Fiscal Year 2019**  
**Energy-aMW**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	WATER YEAR	OCT	NOV	DEC	JAN	FEB	MAR	APR 15	APR 30	MAY	JUNE	JULY	AUG 15	AUG 30	SEP	AVG.
1	1929	5,243	6,812	6,895	6,732	6,185	6,153	4,914	7,104	7,652	7,679	5,163	6,648	5,883	5,896	6,389
2	1930	5,439	7,089	6,847	5,648	6,443	5,965	6,128	8,121	7,064	5,030	7,186	7,098	5,989	5,832	6,350
3	1931	5,452	7,215	7,180	6,244	5,163	5,557	5,766	4,886	8,158	5,460	7,011	7,027	6,095	5,550	6,251
4	1932	5,327	6,664	6,997	5,039	5,098	7,628	10,706	11,887	12,660	11,908	8,530	7,385	7,174	6,337	7,899
5	1933	5,247	6,148	8,661	10,227	10,202	9,272	7,866	8,243	10,071	13,783	11,452	9,428	8,360	5,998	8,995
6	1934	6,156	9,887	13,356	13,920	13,075	12,783	12,097	11,732	10,979	10,056	7,696	6,251	5,734	5,679	10,108
7	1935	5,350	5,743	6,696	9,828	9,535	9,183	6,042	8,610	9,442	8,960	9,547	8,844	6,229	5,190	7,856
8	1936	5,338	6,812	6,520	5,414	6,189	6,301	6,279	10,783	12,599	11,326	7,625	6,821	5,885	5,632	7,384
9	1937	5,313	7,229	6,889	5,337	5,746	5,852	5,206	5,624	8,333	6,888	5,550	6,827	5,742	5,638	6,208
10	1938	5,296	6,773	7,817	9,180	9,539	9,243	9,754	12,598	11,999	10,300	8,876	6,144	5,549	6,014	8,495
11	1939	5,238	6,652	6,642	7,903	7,259	6,824	7,543	9,765	9,765	6,844	7,238	6,748	5,810	5,915	7,099
12	1940	5,397	7,382	7,130	8,240	7,032	10,092	7,951	8,992	9,440	6,746	6,950	6,108	5,391	5,763	7,370
13	1941	5,213	6,998	7,526	6,412	6,430	6,302	5,124	6,600	8,765	6,905	6,951	7,010	5,994	6,037	6,661
14	1942	5,229	7,604	8,523	9,762	8,616	8,141	6,158	8,618	9,384	9,694	9,581	7,578	6,973	6,624	8,151
15	1943	5,313	5,962	7,168	10,453	9,611	9,625	12,375	12,991	10,960	13,420	11,290	8,492	6,752	5,412	9,118
16	1944	5,078	6,846	6,811	6,867	6,629	5,811	4,815	6,726	6,741	4,978	5,947	7,051	5,692	5,614	6,121
17	1945	5,266	6,944	7,133	5,804	5,884	5,807	4,906	4,124	10,269	10,888	5,795	6,522	5,774	5,568	6,670
18	1946	5,136	6,881	7,655	8,832	8,601	9,012	10,584	12,792	12,235	10,364	10,288	7,975	7,204	6,115	8,699
19	1947	5,089	6,932	11,332	12,075	11,160	10,484	8,939	9,470	12,031	10,868	9,675	7,697	6,614	5,840	9,316
20	1948	8,098	8,500	9,664	11,675	9,829	9,165	8,205	11,132	13,375	13,472	10,855	9,992	8,877	6,485	10,023
21	1949	5,658	6,632	7,924	9,117	8,120	10,269	9,176	11,727	12,560	10,618	6,383	6,122	5,146	5,513	8,239
22	1950	5,062	6,576	7,368	11,351	11,786	10,411	10,794	10,461	10,880	13,390	12,522	9,907	8,677	6,254	9,612
23	1951	6,345	8,890	11,476	13,493	13,240	13,296	11,349	11,370	12,251	10,683	11,036	8,236	6,624	5,896	10,438
24	1952	7,462	7,648	9,663	11,343	10,256	9,200	11,061	13,176	13,606	11,245	9,347	7,598	6,200	5,087	9,488
25	1953	5,199	6,598	6,600	8,025	9,260	8,163	6,527	7,894	10,184	13,930	11,745	8,242	7,262	5,955	8,376
26	1954	5,583	6,944	8,793	11,056	10,836	10,498	8,357	9,452	11,994	12,383	12,505	10,431	10,110	8,617	9,864
27	1955	5,688	7,884	8,936	7,838	7,564	6,021	5,794	7,664	9,632	13,514	12,153	9,608	7,568	5,699	8,356
28	1956	5,861	8,376	11,390	13,068	12,745	11,973	10,382	12,873	13,355	13,210	11,161	9,041	8,197	5,973	10,609
29	1957	5,811	6,605	9,015	9,434	8,071	8,637	10,130	9,176	13,963	13,795	8,544	7,084	6,376	5,922	8,852
30	1958	5,127	6,919	6,848	9,745	9,049	8,981	7,793	10,202	12,733	12,635	7,952	7,478	6,154	5,549	8,438
31	1959	5,433	7,666	10,751	12,575	12,086	11,215	9,786	9,164	11,081	12,789	11,641	9,606	8,808	9,163	10,246
32	1960	9,173	9,934	10,701	10,510	9,354	9,002	13,030	10,917	9,321	11,594	9,568	7,890	6,150	5,520	9,468
33	1961	5,559	6,803	8,217	10,032	10,064	11,118	8,801	8,802	11,813	12,765	8,380	7,663	6,460	5,647	8,847
34	1962	4,983	6,825	7,727	9,491	9,249	6,876	10,902	12,526	10,943	9,950	8,453	7,506	6,817	5,340	8,214
35	1963	6,141	7,855	10,318	10,832	9,395	8,237	6,192	8,076	10,022	10,034	9,255	7,504	6,457	6,219	8,535
36	1964	5,104	6,550	8,175	7,965	7,797	6,976	9,247	7,771	10,593	13,601	11,940	9,490	8,432	6,866	8,586
37	1965	6,427	7,491	11,610	13,905	14,322	12,563	7,905	12,896	12,643	11,377	9,402	8,921	8,244	5,594	10,344
38	1966	5,868	6,865	8,594	8,913	8,585	7,229	11,072	8,828	8,518	9,516	9,443	8,447	6,253	5,640	8,032
39	1967	5,208	6,532	8,813	11,722	11,550	10,693	7,492	5,737	10,275	13,294	11,390	8,372	7,610	6,123	9,175
40	1968	5,691	7,193	8,583	10,876	10,046	9,699	5,868	7,200	8,245	11,981	10,008	8,597	7,432	7,587	8,700

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**BP 18 Final Proposal Federal Regulated Hydro Generation**  
**Fiscal Year 2019**  
**Energy-aMW**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
<b>WATER YEAR</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>	<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>APR 15</b>	<b>APR 30</b>	<b>MAY</b>	<b>JUNE</b>	<b>JULY</b>	<b>AUG 15</b>	<b>AUG 30</b>	<b>SEP</b>	<b>AVG.</b>	
41	1969	6,610	8,511	9,689	12,615	13,164	11,032	11,006	12,527	13,117	11,580	9,636	7,259	6,353	5,687	9,998
42	1970	5,613	7,034	7,278	9,509	8,979	8,397	6,635	7,718	10,431	13,003	7,217	7,089	6,050	5,601	8,057
43	1971	5,161	6,641	7,860	12,881	14,250	12,088	10,771	11,592	13,214	13,473	11,832	9,306	9,339	6,201	10,320
44	1972	5,847	6,761	8,804	12,732	13,284	13,833	12,597	10,024	12,967	13,233	11,844	10,053	9,622	6,450	10,572
45	1973	5,812	6,899	8,331	9,356	7,507	6,656	4,107	6,744	8,592	6,032	6,904	6,609	5,682	5,664	6,948
46	1974	5,302	6,409	9,402	14,659	14,156	13,529	11,350	12,485	12,546	13,212	12,655	9,799	9,599	6,334	10,805
47	1975	5,020	6,830	7,076	9,718	9,635	9,287	6,467	7,676	11,583	13,711	12,293	8,307	7,911	6,563	8,905
48	1976	6,662	8,866	12,606	12,577	11,868	12,169	11,604	11,251	13,300	11,916	11,420	10,723	10,723	9,709	11,106
49	1977	5,893	6,956	6,967	7,171	6,986	6,103	4,427	6,066	6,377	4,787	6,044	6,998	5,761	5,034	6,161
50	1978	4,799	6,827	8,254	9,380	9,165	8,141	10,812	9,484	11,580	9,285	9,537	7,043	6,072	7,747	8,444
51	1979	6,035	6,976	6,936	8,567	6,783	8,391	6,017	8,268	11,137	8,589	5,563	6,620	5,843	5,858	7,357
52	1980	5,274	6,926	6,382	7,772	6,987	6,515	7,867	9,762	12,975	12,058	8,140	6,418	5,818	5,953	7,823
53	1981	5,252	6,845	10,242	12,180	11,404	8,292	4,737	7,968	10,346	13,376	10,944	9,861	8,633	6,128	9,209
54	1982	5,468	7,250	8,382	10,807	13,948	13,597	10,625	10,142	12,745	13,451	12,562	9,610	9,177	7,358	10,425
55	1983	6,503	7,248	9,053	11,593	11,656	12,059	9,395	9,134	11,540	11,978	11,478	9,411	7,802	6,426	9,778
56	1984	5,644	9,198	9,462	10,727	10,767	9,880	11,308	12,061	11,638	13,009	10,806	9,023	6,963	6,422	9,757
57	1985	5,631	7,101	8,410	8,740	8,201	7,281	8,826	10,241	10,551	8,285	6,910	5,932	5,043	5,773	7,653
58	1986	5,027	8,538	8,722	10,475	10,836	13,314	11,372	12,191	10,162	10,739	8,184	6,852	5,912	5,374	9,113
59	1987	4,925	7,006	8,567	8,195	6,757	7,919	5,562	7,506	10,475	8,260	6,035	6,180	5,267	5,496	7,163
60	1988	5,299	6,973	6,415	6,278	5,409	6,286	5,220	7,430	8,199	6,430	7,302	6,888	5,899	5,560	6,411
61	1989	5,140	7,109	7,429	6,918	6,182	7,782	7,730	12,309	10,210	8,682	6,655	6,337	5,626	5,588	7,310
62	1990	5,338	7,107	9,088	10,133	10,337	9,838	7,535	11,568	9,257	11,621	9,071	8,710	7,840	5,536	8,752
63	1991	5,045	8,938	10,071	11,478	10,835	10,510	9,121	8,731	10,474	11,317	11,396	9,709	7,945	5,513	9,439
64	1992	5,408	6,832	6,465	7,583	7,236	8,326	4,534	6,658	8,205	6,027	6,108	6,510	5,579	5,375	6,603
65	1993	5,444	7,173	7,052	6,012	5,307	6,923	6,438	8,017	10,922	9,580	7,212	7,009	6,235	5,781	7,115
66	1994	5,319	7,359	7,357	5,646	6,056	5,938	5,257	7,319	9,435	8,347	6,990	6,681	5,638	5,772	6,724
67	1995	5,397	6,484	6,999	8,348	8,832	9,480	6,812	7,749	9,888	12,150	8,614	6,891	6,138	6,308	8,017
68	1996	6,268	10,151	14,294	14,250	13,984	13,883	10,871	12,814	12,686	12,060	11,463	9,474	7,945	5,971	11,294
69	1997	5,478	6,979	9,607	14,399	14,595	13,860	11,376	12,959	13,211	13,443	11,821	9,292	9,379	7,327	11,001
70	1998	8,378	8,387	8,401	9,096	8,876	8,024	7,361	8,943	13,094	13,124	9,374	8,092	6,356	5,463	8,967
71	1999	5,174	6,203	9,269	12,611	12,637	12,392	9,168	10,872	10,862	12,993	11,876	10,327	9,474	6,494	10,026
72	2000	5,485	9,524	10,328	9,977	9,667	8,983	10,530	12,315	11,256	8,013	8,928	7,830	5,656	5,256	8,794
73	2001	5,238	6,796	6,909	6,864	6,630	6,260	4,758	6,373	7,480	4,160	6,258	7,045	5,608	5,063	6,131
74	2002	4,701	6,919	7,076	6,617	6,633	7,020	7,413	10,940	9,850	12,693	10,504	7,389	6,329	5,847	7,824
75	2003	5,475	7,230	7,074	6,586	6,125	8,370	7,506	8,653	9,812	11,422	6,857	6,264	5,221	5,226	7,335
76	2004	5,294	7,522	7,651	7,764	6,426	7,603	6,638	7,971	9,429	8,345	7,316	6,760	6,213	6,808	7,332
77	2005	5,945	6,858	8,836	9,167	8,719	6,690	4,955	7,495	10,353	8,993	7,864	7,114	5,724	5,698	7,644
78	2006	4,859	6,972	8,381	10,445	10,639	9,405	11,393	12,318	12,574	12,354	8,569	6,468	5,811	5,247	8,937
79	2007	5,416	7,177	7,698	9,915	9,136	9,778	9,691	8,603	10,135	9,763	9,025	6,746	5,566	5,135	8,202
80	2008	5,500	7,369	6,699	7,454	7,504	7,072	6,866	5,706	11,563	13,867	9,628	7,684	7,549	5,268	7,986
<b>AVERAGE</b>	<b>5,608</b>	<b>7,284</b>	<b>8,431</b>	<b>9,551</b>	<b>9,243</b>	<b>9,040</b>	<b>8,246</b>	<b>9,441</b>	<b>10,759</b>	<b>10,665</b>	<b>9,111</b>	<b>7,846</b>	<b>6,850</b>	<b>6,016</b>	<b>8,488</b>	

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**6. PNW REGIONAL HYDRO FORECASTS BY WATER YEAR .....77**

**Table 6.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1	1929	10,791	13,268	12,914	12,241	11,385	11,308	10,928	14,304	15,401	15,460	11,139	11,904	10,710	10,446	12,356
2	1930	10,149	12,730	12,536	11,091	12,515	11,132	11,479	15,359	13,975	11,495	13,559	12,335	10,862	10,232	12,031
3	1931	10,133	13,021	12,612	12,386	9,771	10,511	10,728	10,991	15,245	11,530	12,788	11,865	10,683	9,756	11,675
4	1932	9,952	12,477	12,728	10,925	10,204	14,334	18,632	21,378	22,253	21,709	16,022	13,821	12,624	11,218	14,602
5	1933	10,274	13,056	15,878	18,294	17,114	16,124	13,693	15,332	18,835	23,865	20,712	16,700	14,876	11,412	16,319
6	1934	12,754	18,425	22,923	24,021	21,480	21,346	21,072	20,939	19,804	18,535	14,223	11,360	10,561	9,849	17,924
7	1935	10,201	12,683	13,409	17,736	16,717	15,399	11,331	15,525	18,240	17,843	17,387	15,254	12,075	9,536	14,680
8	1936	10,158	12,703	11,923	10,958	11,475	11,891	12,111	19,073	22,364	21,279	14,594	12,214	10,821	10,017	13,710
9	1937	10,036	12,923	12,464	10,751	10,270	10,826	10,972	11,254	15,771	15,477	11,687	12,440	10,689	10,140	11,925
10	1938	10,316	13,694	14,952	16,859	16,448	16,344	17,193	22,699	22,091	19,189	16,465	11,845	10,615	10,728	15,678
11	1939	10,202	12,802	12,923	14,784	13,427	12,767	14,053	18,125	18,384	14,523	13,788	12,022	10,636	10,409	13,451
12	1940	10,245	13,261	13,362	14,818	13,320	17,611	14,204	16,056	17,737	13,601	12,935	10,787	9,862	10,061	13,539
13	1941	9,812	12,747	13,644	11,930	11,944	11,278	9,719	13,060	15,831	13,661	12,637	11,880	10,525	10,377	12,207
14	1942	9,950	13,764	15,711	16,804	15,136	14,016	11,600	16,183	17,328	18,109	17,488	13,256	12,275	11,617	14,714
15	1943	10,123	12,636	14,171	18,423	17,271	16,996	22,575	23,294	20,532	23,894	20,924	15,401	12,502	10,392	16,839
16	1944	10,420	13,179	13,150	12,596	12,314	11,533	10,301	13,244	13,323	10,874	11,530	12,074	10,306	9,890	11,812
17	1945	9,670	12,464	12,391	12,368	11,644	11,085	10,849	9,801	18,817	19,960	12,052	11,879	10,583	10,188	12,684
18	1946	10,299	13,634	14,914	16,879	15,551	16,229	18,715	22,808	22,263	19,979	18,778	14,089	12,932	11,182	16,166
19	1947	10,468	14,083	20,453	20,235	19,523	18,345	16,837	18,320	21,281	20,091	17,532	13,684	12,724	10,688	16,949
20	1948	15,734	16,511	17,314	20,083	17,020	15,871	14,876	20,042	23,519	24,096	19,504	17,298	15,695	12,001	17,978
21	1949	11,323	13,365	14,688	15,758	14,793	17,948	16,670	21,421	22,860	20,467	13,313	11,907	10,171	10,237	15,401
22	1950	10,273	13,546	14,071	20,281	20,244	18,882	20,067	20,193	20,467	24,042	22,309	17,652	15,898	11,769	17,713
23	1951	13,338	17,755	21,325	23,326	23,275	22,356	20,876	21,422	22,169	20,205	19,587	15,464	12,536	11,324	19,129
24	1952	14,971	15,228	17,815	19,468	18,123	16,445	19,219	23,743	23,805	21,116	17,228	13,568	12,119	9,621	17,342
25	1953	10,245	12,457	12,362	16,262	17,127	14,783	12,730	15,037	19,862	23,956	20,606	15,385	13,239	11,147	15,570
26	1954	11,229	14,048	16,852	20,012	19,182	18,294	16,124	18,063	21,341	22,580	22,056	18,088	17,542	15,231	17,975
27	1955	11,512	15,502	16,160	14,681	14,012	11,282	11,915	14,040	17,906	24,048	21,494	16,813	13,654	10,767	15,469
28	1956	12,626	16,811	20,671	23,007	21,499	20,641	19,468	23,787	23,466	24,208	20,041	16,557	14,802	11,397	19,294
29	1957	12,036	13,372	17,136	16,891	15,365	16,210	18,360	17,174	23,974	24,164	16,070	12,966	11,735	10,652	16,337
30	1958	10,315	13,131	13,502	17,810	17,100	15,965	14,812	18,576	22,960	22,829	15,136	13,405	11,486	10,156	15,655
31	1959	10,873	15,297	19,491	21,744	20,241	18,880	18,030	17,993	20,210	22,441	20,436	16,476	15,342	16,193	18,296
32	1960	17,459	18,692	18,763	18,072	16,864	16,038	23,098	20,084	18,346	20,964	17,401	14,231	12,177	10,214	17,296
33	1961	10,810	13,924	15,169	17,967	18,501	18,919	16,120	16,272	20,944	22,569	15,526	13,931	11,446	10,205	16,099
34	1962	10,163	13,164	14,639	16,994	16,101	12,524	19,841	22,990	20,167	18,859	15,770	13,671	12,475	10,199	15,240
35	1963	12,117	15,596	18,639	18,358	17,666	14,716	12,104	15,036	19,000	19,166	16,866	13,119	11,767	11,390	15,786
36	1964	10,354	13,371	15,086	15,352	14,367	13,002	16,759	14,903	19,836	24,395	21,189	16,761	15,002	12,675	15,949
37	1965	12,503	14,477	21,050	23,728	24,229	21,004	15,378	23,390	22,506	20,377	17,545	15,934	14,909	10,746	18,558
38	1966	11,517	13,466	15,547	16,341	15,124	13,550	20,017	16,875	16,898	18,595	17,157	14,480	11,615	10,334	14,995
39	1967	10,299	12,933	16,620	20,746	19,462	18,361	14,426	12,268	19,368	23,829	19,974	15,392	13,583	11,153	16,705
40	1968	11,744	14,152	15,803	19,402	18,393	17,434	11,375	13,528	16,354	21,893	17,992	15,040	13,667	13,848	16,137



**Table 6.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
41	1969	13,170	16,634	17,813	21,601	21,300	18,415	20,144	23,171	23,516	21,532	17,626	13,460	11,826	10,630	18,020
42	1970	11,158	13,489	13,925	17,779	16,227	14,901	12,802	14,218	19,823	22,685	14,045	13,401	11,380	10,216	15,000
43	1971	10,266	13,337	14,971	22,616	24,108	21,049	19,523	21,252	23,272	24,561	21,467	17,306	16,304	11,772	18,684
44	1972	11,907	13,922	16,498	22,348	22,993	24,561	23,604	19,636	23,095	24,231	21,242	17,827	16,856	12,272	19,318
45	1973	11,718	13,633	16,213	16,942	13,815	12,243	9,862	12,872	16,205	13,076	13,226	11,785	10,292	10,200	13,314
46	1974	10,282	13,386	17,663	25,487	23,895	23,089	21,069	23,060	22,594	24,265	22,450	17,527	16,791	11,895	19,499
47	1975	10,336	13,468	14,352	18,037	17,336	16,497	12,961	14,911	21,499	23,676	21,995	15,537	14,662	12,245	16,539
48	1976	13,463	17,320	22,744	22,219	20,377	20,443	20,570	20,551	23,211	21,705	20,442	18,772	18,504	16,737	19,824
49	1977	11,439	13,186	12,868	12,853	12,660	11,961	9,419	11,952	12,573	10,331	11,292	11,900	10,297	8,821	11,647
50	1978	9,551	12,901	15,737	16,775	15,913	14,719	19,414	17,995	21,022	17,545	17,731	13,003	11,650	14,183	15,585
51	1979	11,488	13,307	13,243	14,994	13,103	15,517	11,203	15,291	20,260	17,043	11,483	11,781	10,814	10,608	13,806
52	1980	10,208	12,824	12,715	14,667	13,676	12,409	14,654	18,394	22,831	21,716	15,479	11,932	11,034	10,853	14,612
53	1981	10,134	13,313	19,280	20,650	19,762	14,724	10,492	14,904	18,803	22,955	18,757	16,534	14,760	11,072	16,469
54	1982	10,928	14,017	16,017	19,075	23,869	22,581	19,087	18,771	22,573	23,311	22,004	16,871	15,955	13,323	18,554
55	1983	12,820	14,267	17,266	20,964	20,692	20,785	17,177	17,399	21,216	21,682	20,533	17,164	14,182	11,918	17,916
56	1984	11,307	17,885	17,589	19,999	18,952	17,545	19,577	20,957	20,856	23,032	19,517	16,081	12,914	12,032	17,771
57	1985	11,509	14,667	15,485	15,832	14,440	13,420	16,270	18,902	19,967	16,627	13,456	11,121	9,741	10,823	14,515
58	1986	10,789	16,516	15,663	19,036	19,342	22,501	20,693	21,577	19,093	20,027	15,189	12,580	11,145	10,054	16,742
59	1987	10,162	14,008	15,624	14,916	13,007	14,881	10,987	14,900	19,134	15,625	11,853	11,075	9,726	9,875	13,543
60	1988	9,898	12,563	12,206	12,325	10,430	11,786	10,663	14,434	16,040	13,528	13,793	11,986	10,709	9,796	12,202
61	1989	9,950	13,893	13,651	13,349	11,538	14,070	14,750	22,151	19,381	17,049	13,422	11,891	10,902	10,319	13,879
62	1990	10,209	14,222	16,722	18,700	17,880	17,046	14,710	20,715	17,925	21,417	17,058	15,182	13,898	10,211	16,123
63	1991	10,306	17,681	17,757	19,726	18,743	17,898	17,065	16,478	19,430	20,838	20,191	16,819	14,294	10,195	17,082
64	1992	10,185	13,240	12,587	13,982	13,436	14,424	10,212	12,533	15,282	11,863	11,421	11,201	9,812	9,342	12,301
65	1993	9,919	13,168	12,685	12,015	9,557	12,942	12,597	15,193	20,032	18,292	14,083	13,172	11,516	10,675	13,321
66	1994	10,172	13,235	13,359	11,614	11,149	11,193	10,402	14,619	17,521	15,820	13,090	11,724	10,132	10,081	12,562
67	1995	10,011	12,413	13,486	15,471	16,414	16,979	13,192	14,466	18,674	21,998	16,153	13,034	11,335	11,244	14,890
68	1996	12,212	19,519	24,575	24,843	24,592	24,167	20,446	23,992	22,676	21,708	20,058	16,465	14,262	11,239	20,243
69	1997	11,029	14,067	17,898	24,962	24,479	23,512	21,079	23,854	23,261	23,925	21,262	16,775	16,496	13,789	19,747
70	1998	16,479	16,292	15,913	17,375	16,268	15,061	14,186	16,938	23,151	23,422	17,234	14,229	12,259	10,342	16,699
71	1999	10,369	12,910	17,582	22,096	21,542	21,202	17,012	20,357	20,742	23,713	21,421	18,368	16,818	11,996	18,308
72	2000	10,955	18,314	18,860	18,034	16,908	15,876	19,027	22,415	20,589	16,491	16,224	13,761	10,999	9,770	16,251
73	2001	10,309	12,617	12,598	12,078	11,873	11,633	10,016	12,473	14,178	9,700	11,745	11,925	10,054	8,911	11,494
74	2002	9,284	12,433	13,461	13,392	12,402	12,771	13,736	19,420	18,559	22,423	18,947	13,237	12,185	10,426	14,453
75	2003	10,096	13,220	12,895	12,847	11,662	14,987	13,504	15,839	17,884	20,188	13,048	11,271	9,598	9,351	13,442
76	2004	10,430	13,743	14,159	14,530	12,044	13,484	12,094	14,897	17,503	15,989	14,139	12,191	11,502	12,308	13,649
77	2005	11,320	13,214	15,956	16,282	14,999	11,838	9,563	13,919	18,216	17,018	14,449	12,671	10,468	10,142	13,893
78	2006	9,672	13,157	15,314	19,327	18,718	16,291	19,610	21,917	22,521	22,557	15,742	12,137	10,835	9,544	16,233
79	2007	10,089	14,820	14,821	17,680	16,104	17,723	17,660	16,291	18,849	18,315	16,195	12,454	10,424	9,229	15,180
80	2008	10,330	13,434	12,994	13,908	13,294	12,933	12,766	11,489	20,810	24,139	18,193	13,725	13,607	10,094	14,668

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**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1	1929	10,793	13,270	12,916	12,242	11,401	11,299	10,922	14,302	15,392	15,391	11,117	11,959	10,764	10,435	12,353
2	1930	10,151	12,732	12,538	11,096	12,518	11,135	11,472	15,357	13,961	11,464	13,545	12,345	10,869	10,225	12,027
3	1931	10,135	13,023	12,614	12,391	9,775	10,510	10,722	10,989	15,235	11,505	12,778	11,865	10,681	9,748	11,672
4	1932	9,954	12,479	12,730	10,925	10,208	14,319	18,597	21,175	22,282	21,692	15,993	13,810	12,618	11,206	14,589
5	1933	10,276	13,058	15,880	18,090	17,200	16,086	14,324	15,338	18,857	24,159	21,096	16,688	14,866	11,394	16,388
6	1934	12,756	18,427	22,989	24,093	21,794	21,090	20,989	20,575	19,982	18,243	14,208	11,357	10,558	9,840	17,909
7	1935	10,203	12,685	13,411	17,521	16,787	15,628	11,325	15,523	18,180	17,781	17,384	15,245	12,067	9,525	14,675
8	1936	10,160	12,705	11,925	10,959	11,491	11,894	12,104	19,070	22,426	21,142	14,580	12,213	10,819	10,009	13,703
9	1937	10,038	12,925	12,466	10,757	10,268	10,829	10,965	11,252	15,762	15,447	11,668	12,433	10,684	10,129	11,919
10	1938	10,318	13,696	14,954	16,849	16,465	16,269	17,224	22,704	22,299	19,162	16,435	11,837	10,608	10,717	15,685
11	1939	10,204	12,804	12,925	14,784	13,430	12,770	14,102	18,082	18,387	14,423	13,769	12,018	10,634	10,400	13,441
12	1940	10,247	13,263	13,364	14,823	13,319	17,590	14,198	16,055	17,703	13,573	12,924	10,787	9,860	10,053	13,531
13	1941	9,814	12,749	13,646	11,931	11,960	11,273	9,705	13,058	15,827	13,633	12,624	11,879	10,523	10,366	12,203
14	1942	9,952	13,766	15,714	16,804	15,140	14,019	11,593	16,181	17,311	18,213	17,390	13,212	12,373	11,601	14,715
15	1943	10,125	12,638	14,173	18,424	17,275	17,081	22,556	23,134	20,530	23,992	20,759	15,382	12,490	10,375	16,831
16	1944	10,422	13,181	13,152	12,597	12,318	11,536	10,295	13,242	13,320	10,843	11,513	12,073	10,303	9,882	11,808
17	1945	9,672	12,466	12,393	12,373	11,647	11,089	10,842	9,791	18,824	19,986	12,025	11,873	10,578	10,175	12,684
18	1946	10,301	13,636	14,917	16,880	15,554	16,191	18,691	22,728	22,530	19,967	18,845	14,137	12,979	11,165	16,189
19	1947	10,470	14,085	20,478	20,303	19,538	18,324	16,643	18,228	21,328	20,089	17,498	13,693	12,730	10,669	16,945
20	1948	15,747	16,513	17,316	20,137	17,028	15,875	14,983	20,048	23,706	24,151	19,570	17,360	15,749	11,983	18,019
21	1949	11,325	13,367	14,691	15,759	14,809	17,897	16,788	21,397	22,893	20,443	13,293	11,898	10,165	10,224	15,400
22	1950	10,275	13,548	14,073	20,094	20,446	18,889	19,924	20,124	20,526	24,225	22,695	17,654	15,904	11,750	17,756
23	1951	13,340	17,757	21,373	23,341	23,298	22,252	20,787	21,282	22,421	20,188	19,982	14,963	12,546	11,301	19,150
24	1952	14,984	15,230	17,817	19,464	18,126	16,449	19,263	23,575	24,076	21,142	17,199	13,557	12,111	9,611	17,360
25	1953	10,247	12,459	12,364	16,134	17,222	14,833	12,724	15,035	19,767	24,162	20,904	14,838	13,276	11,134	15,583
26	1954	11,231	14,050	16,854	19,951	19,226	18,385	16,186	17,903	21,613	22,484	22,512	18,177	17,630	15,209	18,037
27	1955	11,514	15,504	16,163	14,681	14,016	11,286	11,909	14,038	17,773	24,215	21,896	16,865	13,657	10,752	15,507
28	1956	12,628	16,813	20,711	23,081	21,635	20,515	19,304	23,632	23,746	24,292	20,431	16,119	14,801	11,380	19,335
29	1957	12,038	13,374	17,138	16,892	15,381	16,160	18,371	17,158	24,227	24,160	16,047	12,960	11,730	10,642	16,352
30	1958	10,317	13,133	13,504	17,810	17,104	15,968	14,806	18,573	22,949	22,776	15,114	13,401	11,481	10,145	15,647
31	1959	10,875	15,299	19,473	21,823	20,260	18,866	17,975	17,923	20,450	22,499	20,821	16,567	15,434	16,170	18,361
32	1960	17,494	18,694	18,763	18,068	16,868	16,174	23,041	19,946	18,295	21,014	17,387	14,218	12,164	10,198	17,298
33	1961	10,812	13,926	15,171	17,968	18,467	18,945	16,140	16,192	21,129	22,418	15,502	13,972	11,490	10,192	16,101
34	1962	10,165	13,166	14,642	16,995	16,105	12,528	19,719	22,645	20,218	18,852	15,742	13,660	12,465	10,185	15,221
35	1963	12,119	15,598	18,641	18,359	17,670	14,720	12,098	15,035	18,917	19,156	16,835	13,156	11,805	11,375	15,779
36	1964	10,356	13,373	15,088	15,353	14,371	13,006	16,760	14,896	19,728	24,558	21,525	16,743	15,047	12,652	15,982
37	1965	12,505	14,479	21,090	23,787	24,211	21,049	15,423	23,179	22,691	20,606	17,475	15,916	14,886	10,723	18,587
38	1966	11,519	13,468	15,550	16,342	15,128	13,553	19,993	16,874	16,842	18,490	17,179	14,517	11,651	10,318	14,985
39	1967	10,301	12,935	16,622	20,605	19,800	18,259	14,349	12,266	19,421	23,997	20,394	14,889	13,587	11,140	16,740
40	1968	11,746	14,154	15,805	19,403	18,396	17,438	11,369	13,526	16,278	21,978	18,113	15,069	13,690	13,824	16,149

**Table 6.1.1**  
**Regional Net Hydro By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
41	1969	13,172	16,636	17,815	21,598	21,540	18,532	20,234	22,793	23,800	21,531	17,597	13,486	11,855	10,614	18,060
42	1970	11,160	13,491	13,927	17,678	16,352	15,104	12,640	14,194	19,602	22,959	14,013	13,384	11,371	10,202	15,010
43	1971	10,268	13,339	14,974	22,517	24,058	20,947	19,705	21,309	23,556	24,606	21,806	16,909	16,341	11,754	18,714
44	1972	11,909	13,924	16,500	22,316	23,127	24,692	23,568	19,589	23,352	24,452	21,655	17,851	16,884	12,254	19,409
45	1973	11,720	13,635	16,215	16,943	13,818	12,246	9,856	12,870	16,200	13,036	13,209	11,787	10,294	10,188	13,309
46	1974	10,284	13,388	17,665	25,559	24,273	23,161	21,018	22,795	22,837	24,493	22,851	17,557	16,825	11,878	19,602
47	1975	10,338	13,470	14,354	18,038	17,340	16,644	12,885	14,862	21,627	24,004	22,084	15,041	14,634	12,221	16,570
48	1976	13,465	17,322	22,792	22,298	20,334	20,336	20,441	20,688	23,513	21,850	20,827	18,814	18,534	16,715	19,895
49	1977	11,441	13,188	12,870	12,854	12,663	11,965	9,413	11,950	12,571	10,308	11,283	11,900	10,295	8,813	11,644
50	1978	9,553	12,903	15,739	16,843	15,916	14,693	19,381	17,956	21,233	17,520	17,699	12,987	11,632	14,160	15,596
51	1979	11,490	13,309	13,246	14,999	13,114	15,508	11,251	15,236	20,214	17,016	11,461	11,776	10,807	10,595	13,797
52	1980	10,210	12,826	12,718	14,668	13,679	12,412	14,649	18,392	23,105	21,827	15,449	11,922	11,024	10,834	14,641
53	1981	10,136	13,315	19,267	20,656	19,766	14,726	10,626	14,893	18,796	22,823	19,144	16,627	14,837	11,057	16,502
54	1982	10,930	14,019	16,020	19,068	23,942	22,803	19,082	18,731	22,800	23,538	22,261	16,853	15,942	13,306	18,634
55	1983	12,822	14,269	17,268	20,976	20,707	20,906	17,233	17,345	21,204	21,910	20,839	16,771	14,216	11,901	17,956
56	1984	11,309	17,887	17,591	20,000	18,956	17,506	19,556	20,928	20,869	23,248	19,438	16,069	12,906	12,016	17,776
57	1985	11,511	14,669	15,487	15,646	14,671	13,423	16,260	18,895	19,896	16,579	13,440	11,116	9,733	10,802	14,503
58	1986	10,791	16,518	15,665	19,037	19,374	22,721	20,535	21,589	19,088	19,947	15,171	12,574	11,141	10,039	16,747
59	1987	10,164	14,010	15,626	14,917	13,024	14,872	11,193	14,821	19,275	15,599	11,840	11,075	9,724	9,863	13,557
60	1988	9,900	12,565	12,208	12,326	10,433	11,790	10,656	14,432	16,030	13,497	13,780	11,986	10,708	9,790	12,198
61	1989	9,952	13,895	13,653	13,350	11,542	14,166	14,621	22,073	19,344	17,022	13,398	11,881	10,889	10,302	13,869
62	1990	10,211	14,224	16,724	18,701	17,903	17,043	14,670	20,598	17,865	21,314	17,027	15,243	13,934	10,197	16,105
63	1991	10,308	17,683	17,759	19,684	18,919	17,906	16,978	16,356	19,553	20,777	20,561	16,804	14,284	10,181	17,119
64	1992	10,187	13,242	12,590	13,988	13,434	14,428	10,205	12,531	15,263	11,840	11,406	11,201	9,810	9,332	12,297
65	1993	9,921	13,170	12,687	12,020	9,560	12,945	12,590	15,207	20,047	18,263	14,051	13,229	11,574	10,655	13,323
66	1994	10,174	13,237	13,361	11,619	11,148	11,196	10,465	14,587	17,499	15,788	13,075	11,771	10,176	10,073	12,562
67	1995	10,013	12,415	13,488	15,471	16,418	16,983	13,185	14,463	18,677	22,145	16,121	13,048	11,353	11,229	14,900
68	1996	12,214	19,521	24,627	24,916	24,707	23,781	20,295	23,664	22,968	21,930	20,415	16,449	14,251	11,222	20,281
69	1997	11,031	14,069	17,900	25,003	24,636	23,705	20,997	23,676	23,563	24,165	21,609	16,755	16,472	13,767	19,840
70	1998	16,492	16,294	15,915	17,376	16,272	15,064	14,179	16,935	23,161	23,511	17,202	14,231	12,264	10,330	16,706
71	1999	10,371	12,912	17,584	22,106	21,610	21,175	17,210	20,311	20,695	23,976	21,824	18,352	16,806	11,982	18,368
72	2000	10,957	18,316	18,858	18,035	16,912	15,879	18,978	22,253	20,676	16,460	16,205	13,758	10,997	9,757	16,245
73	2001	10,311	12,619	12,600	12,079	11,876	11,637	10,009	12,471	14,168	9,669	11,732	11,925	10,053	8,906	11,490
74	2002	9,286	12,435	13,463	13,393	12,405	12,775	13,838	19,386	18,491	22,406	19,056	13,239	12,188	10,413	14,458
75	2003	10,098	13,222	12,898	12,853	11,665	14,986	13,553	15,818	17,847	20,270	13,033	11,271	9,597	9,344	13,446
76	2004	10,432	13,745	14,161	14,530	12,047	13,487	12,138	14,877	17,430	15,952	14,115	12,185	11,492	12,284	13,637
77	2005	11,322	13,216	15,959	16,283	15,003	11,885	9,511	13,909	18,196	16,942	14,427	12,772	10,570	10,129	13,893
78	2006	9,674	13,159	15,317	19,328	18,722	16,295	19,637	21,816	22,494	22,462	15,722	12,133	10,834	9,535	16,218
79	2007	10,091	14,822	14,823	17,681	16,119	17,714	17,676	16,289	18,788	18,286	16,181	12,453	10,423	9,222	15,172
80	2008	10,332	13,436	12,996	13,909	13,298	12,936	12,778	11,486	20,770	24,400	18,165	13,714	13,597	10,076	14,683

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**7. 4(H)(10)(C) CREDIT .....83**

**Table 7.1.1**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2018**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1	1929	1,039	431	1,432	2,067	2,077	723	-946	-1,006	654	168	1,200	0	0	218	751
2	1930	290	0	1,528	3,278	2,218	-1,649	97	-230	1,174	2,911	0	-1,155	-342	-180	719
3	1931	575	138	1,692	2,662	2,390	1,116	739	2,130	-96	2,014	-62	0	0	559	1,024
4	1932	462	219	1,378	3,385	-1,169	672	0	0	0	0	0	-50	0	61	432
5	1933	1,186	1,085	0	0	0	0	0	0	0	0	0	0	0	395	222
6	1934	277	0	0	0	0	0	0	0	0	-483	-167	58	-5	74	-22
7	1935	868	1,608	1,799	0	0	0	0	389	0	0	0	0	0	1,210	474
8	1936	1,095	431	1,807	3,385	2,062	1,352	1	0	0	0	0	0	0	718	901
9	1937	1,120	14	1,416	3,465	2,504	1,628	890	1,121	30	523	804	-388	-373	-219	987
10	1938	633	259	875	8	0	0	0	0	0	0	0	93	-121	80	155
11	1939	1,158	591	1,574	896	995	830	0	0	0	786	-10	0	0	0	567
12	1940	821	384	1,328	1,340	568	0	0	7	0	1,642	0	647	4	-163	520
13	1941	915	355	1,287	2,785	1,131	1,028	1,609	416	0	926	0	0	0	153	799
14	1942	560	0	0	0	391	881	100	0	0	0	0	0	0	-626	105
15	1943	976	1,281	1,127	0	0	0	0	0	0	0	0	0	0	982	365
16	1944	1,355	397	1,481	1,932	1,604	1,721	1,408	149	1,711	2,938	568	-110	0	580	1,249
17	1945	523	4	1,242	2,991	3,123	2,063	88	2,410	0	0	426	-134	-315	-350	910
18	1946	725	190	990	365	0	0	0	0	0	0	0	0	0	279	215
19	1947	1,344	311	0	0	0	0	0	0	0	0	0	0	0	553	185
20	1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1949	775	611	403	0	143	0	0	0	0	0	-80	-137	-222	-80	133
22	1950	1,129	818	1,071	0	0	0	0	0	0	0	0	0	0	138	265
23	1951	88	0	0	0	0	0	0	0	0	0	0	0	0	492	48
24	1952	0	0	0	0	0	0	0	0	0	0	0	0	0	1,314	108
25	1953	1,234	645	1,727	675	0	0	0	0	0	0	0	0	0	443	398
26	1954	850	299	0	0	0	0	0	0	0	0	0	0	0	0	97
27	1955	745	0	0	961	690	1,235	353	0	0	0	0	0	0	696	374
28	1956	572	0	0	0	0	0	0	0	0	0	0	0	0	421	83
29	1957	622	638	0	0	192	0	0	0	0	0	0	-67	-35	479	155
30	1958	1,306	324	1,438	0	0	0	0	0	0	0	0	-127	0	814	321
31	1959	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	85
32	1960	0	0	0	0	0	0	0	0	0	0	-267	0	0	875	49
33	1961	874	440	110	0	0	0	0	0	0	0	-225	-225	0	641	144
34	1962	1,450	368	448	0	0	778	0	0	0	0	0	0	0	1,057	344
35	1963	292	0	0	0	0	0	89	0	0	0	0	0	0	177	43
36	1964	1,329	693	152	834	457	149	0	0	0	0	0	0	0	0	301
37	1965	6	0	0	0	0	0	0	0	0	0	0	0	0	794	66
38	1966	565	378	0	0	0	425	0	0	0	0	0	0	0	755	177
39	1967	1,225	665	0	0	0	0	0	1,002	0	0	0	0	0	275	222
40	1968	742	50	0	0	0	0	414	-436	133	0	0	0	0	0	78

**Table 7.1.1**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2018**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
41	1969	0	0	0	0	0	0	0	0	0	0	-231	0	0	708	39
42	1970	820	209	1,049	0	0	0	0	-341	0	0	0	-65	0	796	225
43	1971	1,272	602	467	0	0	0	0	0	0	0	0	0	0	192	213
44	1972	586	482	0	0	0	0	0	0	0	0	0	0	0	0	89
45	1973	621	344	0	0	747	769	1,959	-165	0	1,875	-155	77	-200	-17	411
46	1974	727	805	0	0	0	0	0	0	0	0	0	0	0	60	133
47	1975	1,413	413	1,251	0	0	0	0	0	0	0	0	0	0	0	260
48	1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	1977	540	287	1,360	1,628	1,128	1,359	1,632	644	2,075	3,137	364	-311	-241	1,158	1,156
50	1978	970	-240	19	0	0	851	0	0	0	0	0	-14	0	0	136
51	1979	183	591	1,440	1,013	826	0	0	697	0	-378	1,013	-66	-101	-232	393
52	1980	931	780	1,888	1,805	617	1,275	0	0	0	0	-225	-152	-123	0	582
53	1981	966	723	0	0	0	0	1,010	945	0	0	0	0	0	267	244
54	1982	965	0	0	0	0	0	0	0	0	0	0	0	0	0	82
55	1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	1984	789	0	0	0	0	0	0	0	0	0	0	0	0	0	67
57	1985	802	142	0	0	222	373	0	0	0	-328	-286	403	5	-7	93
58	1986	1,062	0	-51	0	0	0	0	0	0	0	-39	0	-48	1,022	164
59	1987	1,508	237	0	604	1,442	-347	861	0	0	-78	400	78	-102	209	359
60	1988	919	880	1,986	3,299	2,195	1,543	396	1,569	130	1,949	-268	0	0	60	1,133
61	1989	693	-279	1,045	2,659	1,422	67	0	0	0	-1,128	-736	-44	0	157	321
62	1990	880	787	0	0	0	0	0	0	0	0	0	0	0	861	210
63	1991	1,388	0	0	0	0	0	0	0	0	0	0	0	0	884	191
64	1992	1,025	302	1,801	1,220	1,014	-141	1,363	-144	181	1,898	410	96	-302	-43	678
65	1993	540	-108	1,743	3,188	2,246	413	401	0	0	0	0	-156	0	-96	665
66	1994	899	196	1,026	3,934	1,545	1,767	450	1,628	0	38	0	-97	-73	-141	852
67	1995	814	1,139	1,313	1,229	0	0	0	1,249	0	0	0	0	0	88	437
68	1996	165	0	0	0	0	0	0	0	0	0	0	0	0	423	49
69	1997	955	264	0	0	0	0	0	0	0	0	0	0	0	0	103
70	1998	0	0	0	0	0	0	0	0	0	0	0	0	0	936	77
71	1999	1,259	1,001	0	0	0	0	0	0	0	0	0	0	0	0	189
72	2000	948	0	0	0	0	0	0	0	0	-324	0	-5	0	1,142	148
73	2001	1,195	447	1,418	1,935	1,560	1,348	1,523	499	964	3,755	221	-256	-197	1,134	1,224
74	2002	1,088	-143	1,196	1,917	2,349	530	0	0	0	0	0	-277	-211	551	595
75	2003	958	13	1,128	2,216	2,129	0	0	0	0	0	0	95	0	519	576
76	2004	872	116	730	1,813	1,178	226	0	986	0	37	0	-219	0	0	444
77	2005	488	385	0	0	0	618	1,189	0	0	0	0	0	0	597	224
78	2006	1,574	271	0	0	0	0	0	0	0	0	-7	-187	-275	1,097	226
79	2007	1,017	66	629	0	0	0	0	0	0	0	-31	-167	-364	1,262	223
80	2008	933	0	1,465	1,345	750	321	-326	1,162	0	0	0	0	0	1,126	530
81	Average	794	304	615	760	509	299	191	184	87	273	33	-36	-46	354	347
82	Median	870	248	65	0	0	0	0	0	0	0	0	0	0	201	224

These 4(h)(10)(C) Power Purchase Amounts are used to calculate the credit for power purchase expenses in the Power and Transmission Risk Study.

**Table 7.1.2**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2019**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1	1929	1,039	431	1,432	2,067	2,069	699	-946	-1,006	650	252	1,173	-20	0	258	755
2	1930	254	0	1,528	3,275	2,321	-1,723	102	-227	1,174	2,954	0	0	0	344	827
3	1931	314	0	1,195	2,614	3,844	-315	492	2,477	-104	2,469	-182	0	0	567	966
4	1932	462	238	1,378	2,365	-1,300	673	0	0	0	0	0	-41	0	69	338
5	1933	1,186	1,086	0	0	0	0	0	0	0	0	0	0	0	409	224
6	1934	277	0	0	0	0	0	0	0	0	-486	-167	103	-52	79	-22
7	1935	868	1,610	1,799	0	0	0	0	389	0	-21	-26	0	0	1,217	471
8	1936	1,095	431	1,807	3,318	1,973	1,353	2	0	0	0	0	0	0	710	888
9	1937	1,120	14	1,438	3,462	2,508	1,553	839	1,118	38	534	804	-280	-285	-256	988
10	1938	626	357	872	17	0	0	0	0	0	0	0	99	-151	393	188
11	1939	1,195	591	1,600	896	995	830	0	0	0	861	-24	0	0	0	578
12	1940	821	489	1,322	1,337	572	0	0	7	0	1,655	0	717	44	-72	541
13	1941	810	355	1,300	2,785	1,123	903	1,600	416	0	938	0	0	0	161	781
14	1942	546	0	0	0	391	881	100	0	0	0	0	0	0	-651	102
15	1943	971	1,281	1,105	0	0	0	0	0	0	0	0	0	0	992	363
16	1944	1,355	397	1,516	1,912	1,596	1,726	1,414	149	1,711	2,953	584	-115	0	584	1,253
17	1945	478	-68	1,242	2,981	3,115	1,978	88	2,415	0	0	443	-9	-222	-287	907
18	1946	719	291	1,024	365	0	0	0	0	0	0	0	0	0	292	227
19	1947	1,344	311	0	0	0	0	0	0	0	0	0	0	0	567	186
20	1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1949	775	611	403	0	134	0	0	0	0	0	-56	-78	-179	-5	144
22	1950	1,046	852	1,127	0	0	0	0	0	0	0	0	0	0	153	267
23	1951	88	0	0	0	0	0	0	0	0	0	0	0	0	511	49
24	1952	0	0	0	0	0	0	0	0	0	0	0	0	0	1,265	104
25	1953	1,234	645	1,727	774	0	0	0	0	0	0	0	0	0	452	407
26	1954	850	299	0	0	0	0	0	0	0	0	0	0	0	0	97
27	1955	745	0	0	961	690	1,230	487	0	0	0	0	0	0	708	380
28	1956	572	0	0	0	0	0	0	0	0	0	0	0	0	434	84
29	1957	622	638	0	0	183	0	0	0	0	0	0	0	0	485	159
30	1958	1,306	324	1,434	0	0	0	0	0	0	0	0	-36	0	810	324
31	1959	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	85
32	1960	0	0	0	0	0	0	0	0	0	0	-296	0	0	887	48
33	1961	874	440	110	0	0	0	0	0	0	0	-238	-219	0	647	144
34	1962	1,450	418	586	0	0	778	0	0	0	0	0	0	0	1,067	361
35	1963	292	0	0	0	0	0	89	0	0	0	0	0	0	188	44
36	1964	1,329	693	152	834	457	169	0	0	0	0	0	0	0	0	303
37	1965	6	0	0	0	0	0	0	0	0	0	0	0	0	813	67
38	1966	565	378	0	0	0	425	0	0	0	0	0	0	0	767	178
39	1967	1,225	711	0	0	0	0	0	1,005	0	0	0	0	0	284	227
40	1968	742	50	0	0	0	0	413	-431	207	0	0	0	0	0	84



**Table 7.1.2**  
**4(h)(10)(C) Power Purchase Amounts**  
**Fiscal Year 2019**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
41	1969	0	0	0	0	0	0	0	0	0	0	-243	0	0	714	38
42	1970	820	209	1,049	0	0	0	0	-322	0	0	0	-71	0	806	226
43	1971	1,272	602	467	0	0	0	0	0	0	0	0	0	0	206	214
44	1972	586	482	0	0	0	0	0	0	0	0	0	0	0	0	89
45	1973	621	344	0	0	747	780	1,975	-95	0	1,899	-122	160	-119	-111	420
46	1974	720	811	0	0	0	0	0	0	0	0	0	0	0	73	134
47	1975	1,413	413	1,251	0	0	0	0	0	0	0	0	0	0	0	260
48	1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	1977	540	287	1,360	1,628	1,128	1,358	1,633	646	2,075	3,144	362	-149	-77	1,164	1,170
50	1978	918	-304	121	0	0	881	0	0	0	0	0	-16	0	0	137
51	1979	183	815	1,559	1,010	821	0	0	731	0	-372	1,056	0	-45	-226	432
52	1980	885	932	1,685	1,805	617	1,190	0	0	0	0	-235	-157	-105	0	566
53	1981	966	780	0	0	0	0	917	1,031	0	0	0	0	0	279	249
54	1982	965	0	0	0	0	0	0	0	0	0	0	0	0	0	82
55	1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	1984	789	0	0	0	0	0	0	0	0	0	0	0	0	0	67
57	1985	802	142	0	59	53	373	0	0	0	-351	-219	485	42	0	95
58	1986	1,143	0	0	0	0	0	0	0	0	0	-49	0	-54	1,033	175
59	1987	1,508	237	0	604	1,433	-347	719	0	0	-78	434	176	0	262	368
60	1988	919	921	1,940	3,147	2,195	1,543	396	1,569	136	1,964	-279	0	0	52	1,120
61	1989	712	-219	1,066	2,659	1,422	47	0	0	0	-1,130	-725	-33	0	170	330
62	1990	880	787	0	0	0	0	0	0	0	0	-9	0	0	871	210
63	1991	1,388	0	0	0	0	0	0	0	0	0	0	0	0	894	191
64	1992	1,025	397	1,836	1,216	1,018	-141	1,368	-113	177	1,904	423	126	-255	103	707
65	1993	498	-13	1,597	3,142	2,246	404	401	0	0	0	0	-177	0	-125	649
66	1994	899	421	1,031	3,926	1,548	1,751	397	1,680	0	54	0	-30	0	-45	884
67	1995	812	1,282	1,196	1,229	0	0	0	1,250	0	0	0	0	0	99	440
68	1996	165	0	0	0	0	0	0	0	0	0	0	0	0	436	50
69	1997	955	264	0	0	0	0	0	0	0	0	0	0	0	0	103
70	1998	0	0	0	0	0	0	0	0	0	0	0	0	0	944	78
71	1999	1,259	1,040	0	0	0	0	0	0	0	0	0	0	0	0	192
72	2000	948	0	0	0	0	0	0	0	0	-328	0	-3	-4	1,151	148
73	2001	1,195	447	1,418	1,935	1,507	1,320	1,523	499	972	3,771	250	-96	-151	1,135	1,230
74	2002	1,051	-225	1,199	1,922	2,274	427	0	0	0	0	0	-158	-41	509	580
75	2003	958	13	1,186	2,213	2,129	0	0	0	0	0	-8	153	0	532	584
76	2004	838	219	698	1,813	1,178	226	0	1,025	0	56	0	-157	0	0	452
77	2005	488	385	0	0	0	581	1,234	0	0	0	0	0	0	620	224
78	2006	1,574	271	0	0	0	0	0	0	0	0	-13	-195	-263	1,160	231
79	2007	1,017	66	629	0	0	0	0	0	0	0	-37	-171	-295	1,272	227
80	2008	933	0	1,433	1,345	750	327	-317	1,169	0	0	0	0	0	1,108	527
81	Average	786	321	610	745	522	274	187	192	88	283	33	-2	-28	374	350
82	Median	844	279	116	0	0	0	0	0	0	0	0	0	0	271	227

These 4(h)(10)(C) Power Purchase Amounts are used to calculate the credit for power purchase expenses in the Power and Transmission Risk Study.

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**8. FEDERAL TIER 1 SYSTEM FIRM CRITICAL OUTPUT .....89**

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**Table 8.1.1**  
**Federal Tier 1 System Firm Critical Output Projection - 2-Year Average**  
**RHWM Process for BP-18 Rate Period**

S135-RC-20160803-165201

		A	B	C
<b>1.</b>	<b>TISFCO Projections Energy in aMW</b>	<b>2018</b>	<b>2019</b>	<b>Average</b>
2.	Total Federal System Hydro Generation ( <i>TRM Table 3.1</i> )	6,589.6	6,584.8	6,587.2
3.	Total Designated Non-Federally Owned Resources ( <i>TRM Table 3.2</i> )	1,148.8	986.0	1,067.4
4.	Total Designated BPA Contract Purchases ( <i>TRM Table 3.3</i> )	137.0	137.7	137.4
5.	Total Designated System Obligations ( <i>TRM Table 3.4</i> )	-917.2	-907.9	-912.5
<b>6.</b>	<b>Federal Tier 1 System Firm Critical Output (sum of Lines 2-5)</b>	<b>6,958.2</b>	<b>6,800.6</b>	<b>6,879.4</b>

**Table 8.1.2**  
**Federal System Hydro Generation for use in the T1SFCO Calculation**  
**RHWM Process for BP-18 Rate Period**  
**TRM Table 3.1**  
S135-RC-20160803-165201

	A	B	C
<b>1.</b>	<b>Regulated Hydro</b>		
2.	22.3	21.9	22.1
3.	390.7	390.7	390.7
4.	1,100.1	1,100.1	1,100.1
5.	141.6	137.0	139.3
6.	1,907.1	1,907.1	1,907.1
7.	81.4	81.4	81.4
8.	109.1	109.1	109.1
9.	784.7	784.7	784.7
10.	186.8	186.8	186.8
11.	156.4	156.4	156.4
12.	146.2	146.3	146.3
13.	146.4	146.4	146.4
14.	478.2	478.2	478.2
15.	599.3	599.3	599.3
<b>16.</b>	<b>Independent Hydro</b>		
17.	12.2	12.2	12.2
18.	9.7	9.7	9.7
19.	6.2	6.2	6.2
20.	1.2	1.2	1.2
21.	6.1	6.1	6.1
22.	19.0	19.0	19.0
23.	26.5	26.5	26.5
24.	33.8	33.8	33.8
25.	9.4	9.4	9.4
26.	12.2	12.2	12.2
27.	26.9	26.9	26.9
28.	7.3	7.3	7.3
29.	17.9	17.9	17.9
30.	0.0	0.0	0.0
31.	0.0	0.0	0.0
32.	0.0	0.0	0.0
33.	35.8	35.8	35.8
34.	30.1	30.1	30.1
35.	10.7	10.7	10.7
36.	67.4	67.4	67.4
37.	6.9	6.9	6.9
<b>38.</b>	<b>Total Tier 1 Federal System Hydro Generation</b>		
	<b>6,589.6</b>	<b>6,584.8</b>	<b>6,587.2</b>

<sup>1/</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.1, page 121.

**Table 8.1.3**  
**Designated Non-Federally Owned Resources for use in the T1SFCO Calculation**  
**RHWM Process for BP-18 Rate Period**  
**TRM Table 3.2**  
S135-RC-20160803-165201

		A	B	C
1.	Project	2018	2019	Average
2.	Ashland Solar Project	0.0	0.0	0.0
3.	Columbia Generating Station	1,100.0	937.3	1,018.6
4.	Condon Wind Project	11.7	11.7	11.7
5.	Dworshak/Clearwater Small Hydropower	2.6	2.6	2.6
6.	Foote Creek 1	3.6	3.6	3.6
7.	Foote Creek 2	0.0	0.0	0.0
8.	Foote Creek 4	4.0	4.0	4.0
9.	<i>Fourmile Hill Geothermal (Not included)</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
10.	<i>Georgia-Pacific Paper (Wauna) (Acquisition Expired 4/5/2016)</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
11.	Klondike I	5.7	5.7	5.7
12.	Stateline Wind Project	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</b>	<b>1,148.8</b>	<b>986.0</b>	<b>1,067.4</b>

<sup>1/</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.2, page 122.

**Table 8.1.4**  
**Designated BPA Contract Purchases for use in the T1SFCO Calculation**  
**Preliminary RHWB Process for BP-18 Rate Period**  
**TRM Table 3.3**

S135-RC-20160803-165201

	A	B	C	D	
1.	Contract Purchases	Contract #	2018	2019	Average
2.	Priest Rapids CER for Canada	97PB-10099	29.2	28.8	29.0
3.	Rock Island #1 CER for Canada	97PB-10102	17.7	18.3	18.0
4.	Rock Reach CER for Canada	97PB-10103	37.1	37.6	37.3
5.	Wanapum CER for Canada	97PB-10100	28.2	28.4	28.3
6.	Wells CER for Canada	97PB-10101	23.9	23.6	23.7
7.	BCHP to BPA PwrS	99PB-22685	1.0	1.0	1.0
8.	BCHP to BPA LCA ( <i>settled financially</i> )	99PB-22685	0.0	0.0	0.0
9.	PASA to BPA Pk Repl ( <i>expired 4/30/2015</i> )	94BP-93658	0.0	0.0	0.0
10.	PASA to BPA S/N/X ( <i>expired 4/30/2015</i> )	94BP-93658	0.0	0.0	0.0
11.	PASA to BPA Xchg Nrg ( <i>expired 4/30/2015</i> )	94BP-93658	0.0	0.0	0.0
12.	RVSD to BPA Pk Repl ( <i>expired 4/30/2016</i> )	94BP-93958	0.0	0.0	0.0
13.	RVSD to BPA Seas Xchg ( <i>expired 4/30/2016</i> )	94BP-93958	0.0	0.0	0.0
14.	RVSD to BPA Xchg Nrg ( <i>expired 4/30/2016</i> )	94BP-93958	0.0	0.0	0.0
15.	PPL to BPA SNX (Spring Return) ( <i>expired 6/1/2014</i> )	94BP-94332	0.0	0.0	0.0
16.	PPL to BPA SPX (Summer Return) ( <i>expired 6/1/2014</i> )	94BP-94332	0.0	0.0	0.0
17.	<b>Total Designated BPA Contract Purchases</b>		<b>137.0</b>	<b>137.7</b>	<b>137.4</b>

<sup>1/</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.3, page 123.



**Table 8.1.5**  
**Designated BPA System Obligations for use in the T1SFCO Calculation**  
**Preliminary RHWB Process for BP-18 Rate Period**  
**TRM Table 3.4 (Negative numbers indicate obligations)**  
S135-RC-20160803-165201

	A	B	C	D	
1.	System Obligation	Contract #	2018	2019	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	lbp-4512; 14-03-001-12160	-142.9	-142.9	-142.9
4.	BPA to BRCR Crooked River Project	14-03-73152	-0.7	-0.7	-0.7
5.	BPA to BROP Owyhee Project	EW-78-Y-83-00019	-1.7	-1.7	-1.7
6.	BPA to BRRP Rathdrum Prairie Project	14-03-49151	-0.6	-0.6	-0.6
7.	BPA to BRSID Southern Idaho Projects	EW-78-Y-83-00019	-20.0	-20.0	-20.0
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	-2.4	-2.4	-2.4
13.	BPA to BRYK Yakima Project	DE-MS79-88BP92591	-1.8	-1.8	-1.8
14.	BPA to BCHP LCA (settled financially)	99PB-22685	0.0	0.0	0.0
15.	BPA to BCHA Can Ent	99EO-40003	-468.5	-462.4	-465.5
16.	BPA to BCHA NTSA	12PG-10002	-9.1	-9.1	-9.1
17.	BPA to BHEC 2012PSC (expired 6/30/2017)	97PB-10051	0.0	0.0	0.0
18.	BPA to PASA C/N/X (expired 4/30/2015)	94BP-93658	0.0	0.0	0.0
19.	BPA to PASA S/N/X (expired 4/30/2015)	94BP-93658	0.0	0.0	0.0
20.	BPA to RVSD C/N/X (expired 4/30/2016)	94BP-93958	0.0	0.0	0.0
21.	BPA to RVSD Seas Xchg (expired 4/30/2016)	94BP-93958	0.0	0.0	0.0
22.	Federal Intertie Losses (Calculated: 3.0% of Intertie Sales Table 2.12.5 lines 18-21)	n/a	0.0	0.0	0.0
23.	BPA to AVWP WP3 S (expires 6/30/2019)	85BP-92186	-44.8	-44.8	-44.8
24.	BPA to PPL SNX (Spring Delivery) (expired 6/1/2014)	94BP-94332	0.0	0.0	0.0
25.	BPA to PPL SPX (Summer Delivery) (expired 6/1/2014)	94BP-94332	0.0	0.0	0.0
26.	BPA to PSE WP3 S (expired 6/30/2017)	85BP-92185	0.0	0.0	0.0
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	-236.8	-232.7	-234.7
30.	Slice Transmission Loss Returns	n/a	35.5	34.7	35.1
<b>31.</b>	<b>Total Designated System Obligations</b>		<b>-917.2</b>	<b>-907.9</b>	<b>-912.5</b>

<sup>1/</sup> Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.4, page 124-125.

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**9. HYDRO REGULATION ASSUMPTIONS .....97**

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**STUDY NUMBER:** 16\_RateCase18\_final & 16\_RateCase19\_final

**Requested By:** BPA Rates Process

**Due Date:** June 1, 2017

**Purpose of Study:** This is an 80-year continuous study of the system operation for the final proposal BP-18 Rate Case for FY 2018 and FY 2019.

**Study Directories:** **DOP Step:** X:\RATES\16\_RateCase18\_final\DOP18\_Feb2017  
\FY18\_Rate\_APOC18\_updated\_Feb2017

**AER Step:** X:\RATES\16\_RateCase18\_final\AER &  
X:\RATES\16\_RateCase19\_final\AER

**OPER Step:** X:\RATES\16\_RateCase18\_final\OPER\_final &  
X:\RATES\16\_RateCase19\_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) 2018 (October 2017 through September 2018) and one for FY 2019 (October 2018 through September 2019). 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): AOP18 and AOP19 (roll over from AOP18) 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 February 6, 2017 for this BP-18 Final Proposal Rate Case.
- These updates include plant data from the Pacific Northwest Coordination Agreement (PNCA) 2017 data submittal. This continuous 80-year 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 2017 operating year (OY17) 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 OY17 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 OY17 data submittal.
- **Plant Data** are from the PNCA OY17 data submittal.
- **Loads** are from the FELCC OY17 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 OY17 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\16\_RateCase18\_final\DOP18\_Feb2017\FY18\_Rate\_APOC18\_updated\_Feb2017). 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 OY17 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 DOP18 study. 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 OY17 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' DOP18 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 DOP18 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 OY17 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> <u>Forecast Volume (MAF)</u>	<u>Sturgeon Flow Volume</u> <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> <u>Forecast Interval (MAF)</u>	<u>Bull Trout Minimum Flow</u> <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 71.8 MAF (the lowest 20<sup>th</sup> percentile), the September 30 draft limit is 2439 feet (2061.3 ksf) and in years when the forecast is greater than or equal to 71.8 MAF, the September 30 draft limit is 2449 feet (2280.3 ksf). This 71.8 MAF value is obtained from the 2008 BiOp RPA 14, which is based on the RFC 1971 – 2000 forecast. Libby can draft below the September 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 September 30 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 August where possible.

- **Hungry Horse** operates to meet the following minimum flow requirements at the project and at Columbia Falls as shown in the PNCA OY17 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> <u>Apr-Aug Forecast (KAF)</u>	<u>Hungry Horse</u> <u>Minimum Flow (CFS)</u>	<u>Columbia Falls</u> <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 OY17 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, 2890 feet (426.3 ksf) in November, 2888 feet (302.8 ksf) in December, 2886.3 feet (198.8 ksf) in January, 2884.7 feet (101.8 ksf) in February, 2883.5 feet (29.9 ksf) in March, 2883.8 feet (47.8 ksf) on April 15, 2885.3 feet (138.1 ksf) on April 30, 2890 feet (426.3 ksf) in May, full at 2893 feet (614.7 ksf) June through August, and 2892.5 feet (583.1 ksf) in September. This operation is based on best estimated operations from Kerr project.
- **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 higher of winter draft limits [1260 feet (1553.3 ksf), 1250 feet (1209.0 ksf), 1240 feet (884.4 ksf), respectively] or the variable draft limit. The variable draft limit reflects the expected April 10th URC and storage needed for the appropriate Vernita Bar minimum flow requirement. Grand Coulee is then operated to these minimum storage points. These variable draft limits are calculated using the regulated inflows calculated in the hydro regulation 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 on flood control. To support McNary and Priest Rapids flow targets, from April 30 through May



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, and in July Grand Coulee has a draft limit of 1285 feet (2493.0 ksf). From August 1-15, the draft limit for BiOp flow augmentation is 1280 feet (2295.3 ksf) if the July 1 forecast April through August volume runoff at The Dalles is less than 92 MAF; otherwise the draft limit is 1282 feet (2374.4 ksf). From August 16-31, the draft limit is 1278 feet (2217.5 ksf) if the July 1 forecast April through August volume runoff at The Dalles is less than 92 MAF; otherwise the draft limit is 1280 feet (2295.3 ksf). 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, 1.3 feet per day when Grand Coulee is between 1260 feet and 1240 feet, and 1.0 feet per day when Grand Coulee is below 1240 feet. 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 Little Goose, Lower Monumental, and Ice Harbor within one foot of minimum operating pool (MOP) during the period from approximately April 3 through August 31. Lower Granite operates within one foot of MOP from approximately April 3 through November 15 (Ap1-Oct in HYDSIM modeling). 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 OY17 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 OY17 PNCA Planning**

<b>SPILL CRITERIA FOR PNCA OY17 (Feb 1, 2016 Submittal Appendix E)</b>						
	<b>Spill</b>	<b>Min Turb</b>	<b>Min Spill</b>	<b>Days</b>	<b>Hour Ending</b>	<b>Notes</b>
<b>LWG</b>	20 kcfs; 18 kcfs	11.6 kcfs		Apr 3 - May 31; Jun 1 - Aug 31	All hours	Gas Cap: 40 kcfs
<b>LGS</b>	30% flow	11.5 kcfs	8 kcfs if flow<32 kcfs	Apr 3 - May 31; Jun 1 - Aug 31	All hours	Gas Cap: Ap1-Ap2: 30 kcfs; May: 28 kcfs; June: 30 kcfs; Jul-Au2: 28 kcfs
<b>LMN</b>	spill cap; 17 kcfs	11.5 kcfs		Apr 3 - May 31; Jun 1 - Aug 31	All hours	Gas Cap: Ap1: 29 kcfs; Ap2: 28 kcfs; May: 25 kcfs; Jun: 20 kcfs; Jul-Au2: 24 kcfs
<b>IHR</b>	45 kcfs day/Gas Cap night	9.5 kcfs	8.4 kcfs	Apr 3 - 28;	All hours (13 hrs day/11 hrs night)	Gas Cap: 97 kcfs
	30% vs 45 kcfs day/Gas Cap night			Apr 29 - Jul 12;	All hours (13 hrs day/11 hrs night)	
	45 kcfs day/Gas Cap night			Jul 13 - Aug 31	13 hrs day/11 hrs night	
<b>MCN</b>	40% flow	50 kcfs		April 10 - Jun 15;	All hours	Gas Cap: Ap1-Ap2: 117 kcfs; May: 122 kcfs; Jun: 125 kcfs; Jul: 138 kcfs; Au1-Au2: 148 kcfs
	50% flow		Jun 16 - Aug 31	All hours		
<b>JDA</b>	30%	50 kcfs	25%	Apr 10 - 27;	All hours	Gas Cap: Ap1 : 96 kcfs; Ap2: 90 kcfs; May-Jul: 95 kcfs; Au1-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: 131 kcfs; May: 132 kcfs; Jun: 137 kcfs; Jul: 139 kcfs; Au1-Au2: 125 kcfs
<b>BON</b>	Min (100 kcfs, Gas Cap)	30 kcfs	50 kcfs	Apr 10 - Jun 15;	All hours	Gas Cap: Ap1: 106 kcfs; Ap2: 108 kcfs; May: 109 kcfs; Jun: 98 kcfs; Jul: 111 kcfs; Au1: 116 kcfs; Au2: 120 kcfs
	95 kcfs vs 85 kcfs day/121 kcfs night			Jun 16 - Aug 31	16 hrs day/ 8 hrs night	

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 ksf) in November and 1270 feet (1915.1 ksf) 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. Dworshak drafts to meet the summer flow objective, subject to draft limits.
- **John Day** is operated at 262.5 feet (127.8 ksf) from April through September. From October through March, John Day operates to 265 feet (190.4 ksf).
- **Bonneville** second powerhouse corner collector is modeled as “other spill” in HYDSIM, using the “other spill” data from PNCA OY17.
- **Spill at non-Federal projects** is summarized below from PNCA OY17 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.

Non-Federal Spill for Fish (Percent of Total Outflow or cfs)

PROJECTS:	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	0.0	8.4	9.0	9.0	2.8
Rock Island (%)	0.0	9.3	10.0	18.7	20.0	20.0	6.3
Wanapum (cfs)	1,700	20,000	20,000	20,000	20,000	20,000	11,700
Priest Rapids (cfs)	1,800	24,000	24,000	24,000	24,000	24,000	13,400

  

PROJECTS:	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wanapum (cfs)	3,400	3,400	2,550	800	800	1,200	1,458
Priest Rapids (cfs)	2,800	2,800	2,300	200	200	1,100	1,461

- **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.

**OPER STEP**

- All AER Step criteria apply in the OPER Step unless specifically amended below.
- **Loads** in the OPER Step are the 2018 and 2019 Coordinated System firm residual hydro loads from BPA’s LORA Study (Token S1422\_RC-20170309) on March 10, 2017. 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 is able to store water and avoid spill. The Coordinated System independent hydro generation from BPA’s LORA Study (Token S1422\_RC-20170309) 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 2018 and FY 2019.

FY 2018:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	100%	100%	100%	84%	86%	77%	91%	100%	100%	83%	41%	86%
HGH	73%	73%	80%	79%	70%	55%	67%	73%	80%	80%	73%	73%
ALF	99%	79%	99%	99%	99%	99%	99%	99%	99%	99%	79%	72%
DWR	76%	42%	63%	75%	97%	97%	97%	97%	90%	97%	97%	88%
GCL	65%	65%	65%	63%	58%	74%	77%	74%	70%	63%	69%	66%
CHJ	86%	94%	94%	93%	93%	86%	88%	72%	94%	95%	94%	85%
LWG	79%	82%	89%	86%	94%	96%	96%	96%	96%	75%	60%	65%
LGS	65%	68%	72%	79%	80%	94%	95%	94%	94%	82%	81%	96%
LMN	81%	82%	74%	83%	81%	88%	98%	97%	90%	92%	85%	80%
IHR	60%	45%	70%	78%	78%	76%	77%	77%	68%	49%	56%	76%
MCN	79%	85%	88%	96%	96%	95%	92%	95%	83%	80%	78%	85%
JDA	65%	80%	83%	86%	86%	80%	83%	86%	86%	86%	82%	74%
TDA	85%	86%	89%	83%	84%	79%	83%	86%	86%	84%	81%	76%
BON	83%	86%	83%	85%	89%	89%	87%	84%	71%	88%	85%	86%

FY 2019:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	100%	100%	100%	84%	96%	86%	100%	100%	95%	75%	58%	86%
HGH	65%	60%	81%	92%	73%	51%	44%	48%	48%	65%	48%	48%
ALF	99%	79%	99%	99%	99%	99%	99%	71%	65%	32%	28%	36%
DWR	79%	98%	98%	90%	98%	98%	98%	96%	98%	98%	98%	66%
GCL	61%	61%	62%	62%	62%	62%	71%	69%	65%	71%	70%	78%
CHJ	91%	93%	92%	93%	93%	85%	95%	97%	97%	93%	93%	72%
LWG	68%	65%	72%	73%	73%	81%	96%	96%	96%	82%	73%	86%
LGS	85%	90%	88%	96%	94%	95%	95%	94%	92%	81%	34%	68%
LMN	79%	80%	90%	98%	98%	95%	98%	97%	90%	42%	28%	47%
IHR	67%	70%	78%	79%	79%	70%	75%	78%	78%	64%	72%	71%
MCN	79%	89%	94%	97%	97%	96%	94%	96%	91%	96%	89%	84%
JDA	77%	87%	91%	90%	90%	90%	89%	85%	90%	90%	86%	77%
TDA	80%	78%	77%	80%	82%	84%	86%	86%	83%	80%	79%	80%
BON	84%	85%	80%	84%	89%	90%	83%	80%	83%	83%	83%	87%

- 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. Balancing reserve requirements are also included in the availability factors: 646 MW in October, 537 MW in November, 505 MW in December-July and 510 MW in August-September for FY 2018; 511 MW in October-July and 524 MW in August-September for FY 2019. The availability factors also reflect turbine operating requirements for juvenile fish 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 2018:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>LIB</b>	99%	99%	99%	84%	86%	77%	91%	99%	99%	83%	40%	86%
<b>HGH</b>	72%	72%	81%	78%	70%	55%	67%	72%	79%	79%	72%	72%
<b>ALF</b>	92%	82%	92%	92%	92%	92%	92%	92%	92%	92%	82%	71%
<b>DWR</b>	75%	42%	63%	75%	97%	98%	98%	98%	90%	98%	98%	87%
<b>GCL</b>	60%	63%	63%	61%	57%	66%	67%	63%	64%	60%	63%	61%
<b>CHJ</b>	75%	79%	79%	76%	71%	84%	84%	71%	81%	75%	80%	77%
<b>LWG</b>	56%	75%	82%	79%	88%	89%	78%	78%	78%	61%	48%	47%
<b>LGS</b>	47%	61%	65%	72%	73%	87%	78%	77%	78%	68%	67%	73%
<b>LMN</b>	66%	75%	67%	76%	74%	81%	88%	88%	81%	82%	76%	66%
<b>IHR</b>	47%	36%	61%	69%	79%	67%	73%	73%	63%	46%	53%	63%
<b>MCN</b>	56%	79%	82%	90%	89%	89%	72%	74%	65%	63%	61%	61%
<b>JDA</b>	59%	74%	76%	79%	80%	74%	75%	79%	79%	79%	75%	69%
<b>TDA</b>	64%	80%	82%	77%	78%	73%	61%	63%	64%	61%	59%	58%
<b>BON</b>	64%	78%	75%	77%	82%	82%	72%	69%	58%	73%	70%	71%

FY 2019:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>LIB</b>	100%	100%	100%	83%	97%	86%	100%	100%	95%	75%	58%	87%
<b>HGH</b>	65%	60%	82%	92%	72%	50%	44%	48%	48%	65%	48%	48%
<b>ALF</b>	92%	82%	92%	92%	92%	92%	92%	71%	61%	31%	31%	31%
<b>DWR</b>	78%	98%	98%	90%	98%	98%	98%	97%	98%	98%	98%	67%
<b>GCL</b>	60%	60%	60%	60%	60%	58%	64%	64%	61%	64%	64%	68%
<b>CHJ</b>	75%	75%	75%	76%	75%	73%	81%	80%	77%	81%	80%	71%
<b>LWG</b>	49%	58%	65%	66%	66%	74%	78%	78%	78%	66%	59%	63%
<b>LGS</b>	63%	83%	81%	89%	87%	88%	78%	78%	76%	67%	28%	56%
<b>LMN</b>	65%	73%	83%	91%	91%	89%	88%	88%	81%	38%	25%	42%
<b>IHR</b>	55%	61%	69%	69%	70%	61%	71%	73%	73%	60%	67%	58%
<b>MCN</b>	57%	83%	88%	91%	90%	90%	74%	75%	71%	75%	70%	61%
<b>JDA</b>	72%	81%	85%	84%	83%	84%	82%	78%	83%	83%	79%	71%
<b>TDA</b>	61%	72%	70%	74%	76%	78%	62%	63%	61%	58%	57%	61%
<b>BON</b>	66%	78%	73%	77%	82%	82%	68%	66%	69%	68%	68%	72%

- **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. 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** have been removed from the OPER Step 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 DOP18 study for 2018 and 2019 rate case studies with the following additions: 1) One MAF of flow augmentation is stored 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 in May, June, and July. 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 18,000 cfs and May and June flows are equal to or greater than the preceding month whenever possible. No more than a 10,000 cfs decrease is allowed in the April through June trout spawning period. 3) Arrow and Duncan balance operations to ensure that both projects are on DOP18 contents by July 31. 4) Mica balances to the DOP18 contents July-December when Arrow and Duncan cannot.
- **Duncan** targets outflow of 6,700 cfs to support Cora Linn and Brilliant flows but does not draft below 1,845 feet (316.2 ksf) in September. Duncan targets outflow of 2,000 cfs in October, 2,100 cfs in November, 4,200 cfs in December, and 7,600 cfs in January (to support Kootenay Lake elevation). Duncan operates to a minimum flow of 7,700 cfs in February and 2,800 cfs in March unless it is empty. In April Duncan drafts to empty (1794.2 ft, 0.0 ksf), unless the March 1 forecast of May through July volume at Duncan is less than 1,410 KAF then Duncan operates to 1,000 cfs outflow in the first half of April and 100 cfs outflow in the second half of April. In May and June Duncan operates to a flow of 100 cfs unless the URC requires more discharge. Duncan refills to full at 1892 feet (705.8 ksf) in July and between 1890 feet (688.2 ksf) and full in August, unless it is on a minimum flow constraint.
- **Mica** stores up to 1 MAF for flow augmentation in January in all years. Mica releases this storage up to 1 MAF (15 percent in May, 15 percent in June, and 70 percent in July) in years with a February 1 and March 1 forecast April through August volume at The Dalles greater than 75 MAF. In years when February 1 and March 1 forecast April through August volume at The Dalles are less than 75 MAF, half this storage is released in February and the remainder in

March. In years when February 1 forecast is less than 75 MAF and March 1 forecast is greater than 75 MAF, this storage is released half in February and re-stored up to 1 MAF in March to release during May through July. The flow augmentation will all be released by July 31 allowing Mica to be on DOP18 elevation by July 31. The minimum flow at Mica is 0 cfs in January, 5,000 cfs in February and March, 12,000 cfs April 1-15, 10,000 cfs April 16-30, 8,000 cfs in May and June, 10,000 kcfs in July, 15,000 cfs in August, and 10,000 cfs in September-December. The flow augmentation storage in January-March periods is subject to these minimum outflows.

- **Arrow** operates to a minimum flow of 18,000 cfs in April, between 18,000 cfs and 25,000 cfs in May, and between 18,000 cfs and 60,000 cfs in June for trout spawning. From April through June the outflow at Arrow cannot decline unless the June 30 composite content is too far below the DOP18 composite content. Then the outflow is allowed to decrease by up to 10,000 cfs in the April through June trout spawning period. The outflow at Arrow can be increased in May and June to keep the July discharge below 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 71.8 MAF.
    - 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 during April 16-30 and 135,000 cfs in May.
- **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 2060.0 feet (379.5 ksf) but, again, will draft deeper in order to meet the minimum flow of 9,000 cfs at Hells Canyon. 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.
- **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.
- **Grand Coulee** operates at 1285 feet (2493.0 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) October-February. 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. 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 and for Steelhead and Chum flow targets are: 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. 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. July through August, Grand Coulee only fills above 1288 feet (2615.5 ksf) in order to reduce forced spill. Grand Coulee's April-August operation includes additional draft as allowed by the Washington Columbia River Water Management Program. Also, 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 1277.5 feet (2198.3 ksf) at the end of February and 1255 feet (1380.2 ksf) from March through April 30. 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 and include the equivalent of 5 feet (65.5 ksf) flow augmentation in August and the associated increase in pumping the following March or May period to return those 5 feet to Banks Lake. In years when this flow augmentation is not needed to meet the McNary flow augmentation target of 200,000 cfs, the pumping is increased by the equivalent of 5 feet in August and the following year's March or May pumping is decreased.



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

<b>Spill Criteria for BP18 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>	20 kcfs	11.5 kcfs	Apr 3 - Jun 20	All hours	All years
	18 kcfs		Jun 21 - Aug 13		
<b>LGS</b>	30% of total flow	11.5 kcfs	Apr 3 - Aug 19	All hours	All years
<b>LMN</b>	Gas Cap (23 kcfs)	11.5 kcfs	Apr 3 - Jun 20	All hours	All years
	17 kcfs		Jun 21 - Aug 21		
<b>IHR</b>	45 kcfs day/Gas Cap (97 kcfs) night	9.5 kcfs	Apr 3 - Apr 28	All hours	All years; Night 1800-0500 (11 hrs) day 0500-1800 (13 hrs)
	alternate 30% of total flow and 45 kcfs day/Gas Cap (97 kcfs) night		Apr 29 - Jul 13		
	45 kcfs day/Gas Cap (97 kcfs) night		Jul 14 - Aug 22		
<b>MCN</b>	40% of total flow	50 kcfs	April 10 - Jun 15	All hours	All years
	50% of total flow		Jun 16 - Aug 31		
<b>JDA</b>	30% of total flow	50 kcfs	Apr 10 - Apr 27	All hours	All years
	alternate 30% and 40% of total flow		Apr 28 - Jul 20		
	30% of total flow		Jul 21 - Aug 31		
<b>TDA</b>	40% of total flow	50 kcfs	Apr 10 - Aug 31	All hours	All years
<b>BON</b>	100 kcfs	30 kcfs	Apr 10 - Jun 15	All hours	All years
	alternate 85 kcfs day/121 kcfs night and 95 kcfs		Jun 16 - Aug 31	All hours; day/night spill hours vary	All years; Jun1-30 day hrs: 0430-2130; Jul1-31 day hrs: 0430-2200; Aug1-15 day hrs: 0500-2145; Aug16-31 day hrs: 0500-2030.

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 kcf 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:

	120%	122%	125%	127%	130%	135%
LWG:	45 kcf	52 kcf	63 kcf	85 kcf	90 kcf	200 kcf
LGS:	52 kcf	59 kcf	70 kcf	95 kcf	125 kcf	177 kcf
LMN:	44 kcf	60 kcf	80 kcf	120 kcf	180 kcf	250 kcf
IHR:	82 kcf	92 kcf	110 kcf	124 kcf	145 kcf	240 kcf
MCN:	146 kcf	152 kcf	230 kcf	280 kcf	321 kcf	375 kcf
JDA:	146 kcf	177 kcf	190 kcf	206 kcf	250 kcf	300 kcf
TDA:	135 kcf	160 kcf	269 kcf	294 kcf	360 kcf	400 kcf
BON:	130 kcf	160 kcf	183 kcf	234 kcf	250 kcf	280 kcf
CHJ:	60 kcf	100 kcf	160 kcf	190 kcf	250 kcf	280 kcf
GCL (a):	5 kcf	15 kcf	20 kcf	25 kcf	32 kcf	42 kcf
GCL (b):	15 kcf	40 kcf	50 kcf	80 kcf	93 kcf	120 kcf

(a) Spill through outlet tubes is assumed to occur April through June when the reservoir is more likely below the spillway crest.

(b) Spill through drumgates is assumed to occur July through August.

Winter:

	110%	115%	120%
BON:	70 kcf	100 kcf	140 kcf
TDA:	45 kcf	60 kcf	135 kcf
JDA:	20 kcf	80 kcf	144 kcf
MCN:	48 kcf	80 kcf	140 kcf
IHR:	25 kcf	35 kcf	75 kcf
LMN:	18 kcf	23 kcf	44 kcf
LGS:	18 kcf	23 kcf	52 kcf
LWG:	20 kcf	30 kcf	45 kcf
DWR*:	35%		
CHJ:	25 kcf	61 kcf	150 kcf
GCL**:	5 kcf	10 kcf	15 kcf

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

\*\*Spill through drumgates.

**10. FEDERAL LOADS AND RESOURCES FOR FY 2018 AND FY 2019.....113**

**Table 10.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
<b>Firm Obligations</b>															
<b>1 Load Following</b>	2,877	3,351	3,791	3,734	3,536	3,127	3,174	3,197	3,188	3,333	3,613	3,428	3,431	3,098	3,355
2 Preference Customers	2,673	3,207	3,621	3,579	3,390	2,947	2,821	2,847	2,767	2,892	3,109	3,017	3,021	2,741	3,064
3 Federal Agencies	96.4	125	149	144	131	113	96.2	96.7	89.8	91.8	104	101	101	94.0	111
4 USBR	108	19.8	21.3	10.4	14.9	66.6	256	253	332	349	400	310	309	263	180
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>6 Tier 1 Block</b>	481	788	776	842	792	759	378	381	120	0	289	343	343	578	511
7 Tier 1 Block	481	788	776	842	792	759	378	381	120	0	289	343	343	578	511
<b>8 Slice</b>	2,746	3,370	3,490	3,125	3,082	3,008	2,770	2,857	3,471	3,117	2,802	3,040	2,801	2,754	3,058
9 Slice Block	1,328	1,540	1,758	1,752	1,612	1,490	1,384	1,384	1,334	1,306	1,371	1,338	1,338	1,289	1,458
10 Slice Output from T1 System	1,418	1,830	1,731	1,373	1,470	1,519	1,386	1,473	2,137	1,811	1,432	1,702	1,463	1,466	1,600
<b>11 Direct Service Industries</b>	23.0	22.8	22.7	22.9	22.5	87.6	87.8	88.1	87.4	87.3	87.2	87.5	87.5	87.4	60.7
12 Direct Service Industry	23.0	22.8	22.7	22.9	22.5	87.6	87.8	88.1	87.4	87.3	87.2	87.5	87.5	87.4	60.7
<b>13 Contract Deliveries</b>	684	796	790	791	788	733	732	767	695	700	718	785	789	685	743
14 Exports	493	488	484	485	482	489	485	520	504	508	525	594	598	494	505
15 Intra-Regional Transfers (Out)	13.8	131	130	130	129	67.4	69.9	70.0	14.5	14.4	15.8	14.8	14.8	13.7	61.5
16 Firm Surplus Sale	177	177	177	177	177	177	177	177	177	177	177	177	177	177	177
<b>17 Total Firm Obligations</b>	<b>6,811</b>	<b>8,329</b>	<b>8,870</b>	<b>8,515</b>	<b>8,221</b>	<b>7,715</b>	<b>7,141</b>	<b>7,289</b>	<b>7,562</b>	<b>7,237</b>	<b>7,509</b>	<b>7,684</b>	<b>7,451</b>	<b>7,203</b>	<b>7,728</b>
<b>Net Resources</b>															
<b>18 Hydro Resources</b>	5,668	7,539	7,113	5,494	5,926	6,130	5,687	6,118	9,115	7,663	6,024	7,259	6,169	6,010	6,611
19 Regulated Hydro - Net	5,359	7,279	6,937	5,378	5,795	5,897	5,249	5,672	8,393	6,952	5,615	6,884	5,793	5,690	6,259
20 Independent Hydro - Net	307	257	172	113	128	230	435	442	719	708	407	373	373	318	348
21 Small Hydro - Net	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

**Table 10.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
<b>22 Other Resources</b>	1,144	1,164	1,148	1,126	1,143	1,149	1,188	1,174	1,179	1,178	1,177	1,140	1,159	1,155	1,158
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	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
26 Renewable Resources	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
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>28 Contract Purchases</b>	188	194	182	185	177	200	194	206	218	222	201	213	210	191	198
29 Imports	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
30 Intra-Regional Transfers (In)	25.6	20.7	14.4	18.7	11.4	31.1	39.4	39.7	37.7	49.3	39.9	42.6	42.6	29.9	30.2
31 Non-Federal CER	134	138	134	139	137	139	127	138	138	138	133	138	139	132	136
32 Slice Transmission Loss Return	27.0	34.8	32.9	26.1	28.0	28.9	26.4	28.0	40.6	34.4	27.2	32.4	27.8	27.9	30.4
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>34 Reserves &amp; Losses</b>	-210	-265	-252	-203	-216	-223	-211	-224	-315	-272	-222	-258	-226	-220	-238
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	-210	-265	-252	-203	-216	-223	-211	-224	-315	-272	-222	-258	-226	-220	-238
<b>40 Total Net Resources</b>	<b>6,790</b>	<b>8,631</b>	<b>8,191</b>	<b>6,602</b>	<b>7,031</b>	<b>7,256</b>	<b>6,858</b>	<b>7,274</b>	<b>10,197</b>	<b>8,791</b>	<b>7,179</b>	<b>8,354</b>	<b>7,312</b>	<b>7,136</b>	<b>7,728</b>
<b>41 Total Surplus/Deficit</b>	<b>-21</b>	<b>303</b>	<b>-679</b>	<b>-1,913</b>	<b>-1,190</b>	<b>-458</b>	<b>-283</b>	<b>-15</b>	<b>2,634</b>	<b>1,554</b>	<b>-330</b>	<b>670</b>	<b>-139</b>	<b>-66</b>	<b>0</b>

**Table 10.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**

S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
1 <b>Load Following</b>	2,891	3,367	3,806	3,757	3,554	3,144	3,205	3,205	3,210	3,361	3,637	3,450	3,453	3,115	3,375
2 Preference Customers	2,674	3,209	3,623	3,589	3,393	2,952	2,841	2,841	2,775	2,907	3,120	3,026	3,030	2,745	3,070
3 Federal Agencies	110	138	162	158	146	126	110	110	103	105	117	114	114	108	125
4 USBR	108	19.8	21.3	10.4	14.9	66.6	254	254	332	349	400	310	309	263	180
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 <b>Tier 1 Block</b>	485	795	782	849	799	765	382	382	121	0	291	346	346	583	515
7 Tier 1 Block	485	795	782	849	799	765	382	382	121	0	291	346	346	583	515
8 <b>Slice</b>	2,798	3,431	3,561	3,195	3,146	3,068	2,824	2,917	3,357	2,919	2,828	3,090	2,852	2,804	3,079
9 Slice Block	1,379	1,601	1,829	1,822	1,676	1,550	1,439	1,439	1,386	1,355	1,422	1,388	1,388	1,338	1,515
10 Slice Output from T1 System	1,419	1,830	1,732	1,374	1,470	1,518	1,385	1,478	1,971	1,564	1,406	1,702	1,464	1,466	1,564
11 <b>Direct Service Industries</b>	88.0	87.8	87.7	87.9	87.5	87.6	87.9	87.9	87.4	87.3	87.2	87.5	87.5	87.4	87.6
12 Direct Service Industry	88.0	87.8	87.7	87.9	87.5	87.6	87.9	87.9	87.4	87.3	87.2	87.5	87.5	87.4	87.6
13 <b>Contract Deliveries</b>	501	614	608	608	605	532	534	534	479	478	495	559	563	468	540
14 Exports	487	483	479	478	476	464	464	464	464	464	480	544	548	454	478
15 Intra-Regional Transfers (Out)	13.9	131	130	130	129	67.4	70.0	70.0	14.5	14.4	15.8	14.8	14.8	13.7	61.5
16 Firm Surplus Sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 <b>Total Firm Obligations</b>	<b>6,763</b>	<b>8,296</b>	<b>8,846</b>	<b>8,497</b>	<b>8,192</b>	<b>7,597</b>	<b>7,033</b>	<b>7,126</b>	<b>7,254</b>	<b>6,846</b>	<b>7,338</b>	<b>7,532</b>	<b>7,301</b>	<b>7,058</b>	<b>7,596</b>
<b>Net Resources</b>															
18 <b>Hydro Resources</b>	5,668	7,539	7,113	5,498	5,923	6,130	5,687	6,118	9,108	7,649	6,006	7,253	6,165	6,003	6,606
19 Regulated Hydro - Net	5,359	7,279	6,937	5,381	5,791	5,897	5,249	5,672	8,386	6,938	5,597	6,877	5,790	5,682	6,255
20 Independent Hydro - Net	307	257	172	113	128	230	435	442	719	708	407	373	373	318	348
21 Small Hydro - Net	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

**Table 10.1.1**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**

S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
<b>22 Other Resources</b>	1,144	1,164	1,148	1,126	1,143	1,149	1,188	1,174	434	78	1,070	1,140	1,159	1,155	995
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	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	355	0	994	1,100	1,100	1,100	937
26 Renewable Resources	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
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>28 Contract Purchases</b>	243	246	234	237	225	220	222	224	234	222	224	227	224	218	229
29 Imports	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
30 Intra-Regional Transfers (In)	25.5	20.7	14.4	18.7	6.87	4.58	5.22	5.22	4.81	6.59	5.37	4.13	4.12	4.57	10.2
31 Non-Federal CER	138	138	134	139	137	134	138	138	139	133	139	138	139	133	137
32 Slice Transmission Loss Return	27.0	34.8	32.9	26.1	27.9	28.9	26.3	28.1	37.5	29.7	26.7	32.4	27.8	27.9	29.7
33 Augmentation Purchases	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7
<b>34 Reserves &amp; Losses</b>	-211	-267	-254	-205	-217	-224	-212	-225	-294	-239	-219	-258	-226	-220	-234
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	-211	-267	-254	-205	-217	-224	-212	-225	-294	-239	-219	-258	-226	-220	-234
<b>40 Total Net Resources</b>	<b>6,845</b>	<b>8,682</b>	<b>8,241</b>	<b>6,655</b>	<b>7,073</b>	<b>7,276</b>	<b>6,886</b>	<b>7,292</b>	<b>9,482</b>	<b>7,710</b>	<b>7,081</b>	<b>8,361</b>	<b>7,322</b>	<b>7,155</b>	<b>7,596</b>
<b>41 Total Surplus/Deficit</b>	<b>81</b>	<b>386</b>	<b>-605</b>	<b>-1,842</b>	<b>-1,119</b>	<b>-321</b>	<b>-148</b>	<b>165</b>	<b>2,228</b>	<b>864</b>	<b>-257</b>	<b>829</b>	<b>21</b>	<b>98</b>	<b>-0</b>

**Table 10.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**

S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>HLH-MWh</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
<b>Firm Obligations</b>															
<b>1 Load Following</b>	1,292,610	1,428,780	1,642,904	1,650,571	1,438,622	1,417,596	655,494	710,119	1,416,356	1,474,690	1,566,770	754,690	812,743	1,290,894	17,552,840
2 Preference Customers	1,223,445	1,371,326	1,576,650	1,584,151	1,382,819	1,346,586	593,783	643,265	1,238,520	1,297,106	1,383,664	681,850	734,300	1,180,347	16,237,812
3 Federal Agencies	43,230	51,081	62,797	61,603	51,506	49,308	19,577	21,209	39,006	40,230	45,859	22,216	23,925	39,085	570,631
4 USBR	25,935	6,373	3,458	4,816	4,297	21,702	42,134	45,645	138,830	137,354	137,246	50,624	54,518	71,462	744,396
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>6 Tier 1 Block</b>	214,802	340,998	346,368	375,903	319,518	338,313	78,617	85,169	53,701	0	128,881	73,689	79,357	249,707	2,685,022
7 Tier 1 Block	214,802	340,998	346,368	375,903	319,518	338,313	78,617	85,169	53,701	0	128,881	73,689	79,357	249,707	2,685,022
<b>8 Slice</b>	1,236,339	1,446,330	1,508,914	1,351,013	1,248,575	1,358,356	581,513	641,265	1,581,235	1,388,632	1,242,737	704,082	663,766	1,169,239	16,121,994
9 Slice Block	552,386	615,973	703,392	728,924	619,094	643,481	265,751	287,897	555,021	543,278	548,228	278,313	299,722	494,790	7,136,249
10 Slice Output from T1 System	683,953	830,358	805,521	622,088	629,481	714,875	315,762	353,369	1,026,214	845,354	694,509	425,768	364,044	674,450	8,985,745
<b>11 Direct Service Industries</b>	9,789	9,090	9,025	9,306	8,581	36,534	17,474	18,930	36,175	35,073	35,719	18,222	19,624	33,411	296,954
12 Direct Service Industry	9,789	9,090	9,025	9,306	8,581	36,534	17,474	18,930	36,175	35,073	35,719	18,222	19,624	33,411	296,954
<b>13 Contract Deliveries</b>	428,570	459,448	472,981	475,954	432,472	452,567	209,739	227,217	428,927	417,171	432,943	225,201	242,524	407,227	5,312,943
14 Exports	349,218	338,422	349,218	349,218	315,423	348,749	162,218	175,736	349,218	337,953	355,666	185,347	199,605	334,128	4,150,120
15 Intra-Regional Transfers (Out)	5,766	50,270	53,007	53,150	49,123	27,402	13,559	14,689	6,123	5,632	6,521	3,061	3,296	5,174	296,770
16 Firm Surplus Sale	73,586	70,756	70,756	73,586	67,926	76,416	33,963	36,793	73,586	73,586	70,756	36,793	39,623	67,926	866,053
<b>17 Total Firm Obligations</b>	<b>3,182,111</b>	<b>3,684,647</b>	<b>3,980,192</b>	<b>3,862,747</b>	<b>3,447,767</b>	<b>3,603,365</b>	<b>1,542,838</b>	<b>1,682,701</b>	<b>3,516,394</b>	<b>3,315,566</b>	<b>3,407,050</b>	<b>1,775,884</b>	<b>1,818,015</b>	<b>3,150,478</b>	<b>41,969,754</b>
<b>Net Resources</b>															
<b>18 Hydro Resources</b>	2,878,817	3,574,617	3,476,098	2,633,661	2,665,857	3,011,504	1,364,055	1,532,359	4,529,459	3,700,393	3,060,215	1,868,067	1,581,450	2,903,833	38,780,385
19 Regulated Hydro - Net	2,720,272	3,439,275	3,386,014	2,583,037	2,608,741	2,893,061	1,263,344	1,415,460	4,186,472	3,357,718	2,872,626	1,786,361	1,494,080	2,749,389	36,755,851
20 Independent Hydro - Net	157,432	134,201	88,794	49,282	55,944	117,108	100,112	116,256	341,808	341,544	186,536	81,158	86,780	153,434	2,010,390
21 Small Hydro - Net	1,113	1,140	1,291	1,341	1,172	1,335	600	642	1,179	1,130	1,053	548	590	1,010	14,144



**Table 10.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2018 Water Year: 1937**  
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S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>HLH-MWh</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
22 <b>Other Resources</b>	475,361	460,356	458,284	467,668	440,298	496,925	230,312	244,908	490,612	489,978	471,621	236,387	259,361	446,136	5,668,207
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	457,600	440,000	440,000	457,600	422,400	475,200	211,200	228,800	457,600	457,600	440,000	228,800	246,400	422,400	5,385,600
26 Renewable Resources	17,761	20,356	18,284	10,068	17,898	21,725	19,112	16,108	33,012	32,378	31,621	7,587	12,961	23,736	282,607
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 <b>Contract Purchases</b>	123,717	119,599	116,335	120,516	109,372	131,537	59,978	65,191	134,183	135,107	123,800	66,334	69,640	116,460	1,491,768
29 Imports	416	400	400	416	384	432	192	208	416	416	400	208	224	384	4,896
30 Intra-Regional Transfers (In)	10,446	7,808	5,016	8,723	4,857	14,187	8,085	8,758	15,243	19,606	14,992	8,525	9,181	11,858	147,285
31 Non-Federal CER	99,848	95,600	95,600	99,546	92,160	103,323	45,696	49,504	99,008	99,008	95,200	49,504	53,312	91,392	1,168,701
32 Slice Transmission Loss Return	13,007	15,791	15,319	11,831	11,971	13,595	6,005	6,720	19,516	16,076	13,208	8,097	6,923	12,826	170,886
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 <b>Reserves &amp; Losses</b>	-104,109	-123,915	-120,892	-96,264	-95,932	-108,666	-49,409	-55,020	-154,458	-129,849	-109,633	-64,983	-57,235	-103,520	-1,373,884
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	-104,109	-123,915	-120,892	-96,264	-95,932	-108,666	-49,409	-55,020	-154,458	-129,849	-109,633	-64,983	-57,235	-103,520	-1,373,884
40 <b>Total Net Resources</b>	<b>3,373,786</b>	<b>4,030,657</b>	<b>3,929,826</b>	<b>3,125,579</b>	<b>3,119,595</b>	<b>3,531,300</b>	<b>1,604,936</b>	<b>1,787,437</b>	<b>4,999,796</b>	<b>4,195,629</b>	<b>3,546,003</b>	<b>2,105,806</b>	<b>1,853,217</b>	<b>3,362,910</b>	<b>44,566,477</b>
41 <b>Total Surplus/Deficit</b>	<b>191,676</b>	<b>346,010</b>	<b>-50,366</b>	<b>-737,167</b>	<b>-328,172</b>	<b>-72,065</b>	<b>62,098</b>	<b>104,736</b>	<b>1,483,402</b>	<b>880,063</b>	<b>138,953</b>	<b>329,922</b>	<b>35,202</b>	<b>212,431</b>	<b>2,596,723</b>

**Table 10.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Load Following</b>	1,336,181	1,446,456	1,662,796	1,674,335	1,459,768	1,415,173	713,778	713,778	1,443,965	1,472,139	1,636,733	770,038	829,272	1,319,143	17,893,553
2 Preference Customers	1,256,045	1,383,670	1,591,071	1,602,524	1,398,440	1,342,992	639,907	639,907	1,260,702	1,303,160	1,431,558	694,352	747,764	1,203,008	16,495,098
3 Federal Agencies	49,402	56,414	68,267	66,995	57,031	54,201	23,395	23,395	44,433	45,560	52,098	25,062	26,990	44,673	637,914
4 USBR	30,734	6,373	3,458	4,816	4,297	17,980	50,476	50,476	138,830	123,420	153,077	50,624	54,518	71,462	760,541
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>6 Tier 1 Block</b>	216,611	343,870	349,286	379,070	322,209	341,162	82,583	82,583	54,153	0	129,967	74,310	80,026	251,810	2,707,639
7 Tier 1 Block	216,611	343,870	349,286	379,070	322,209	341,162	82,583	82,583	54,153	0	129,967	74,310	80,026	251,810	2,707,639
<b>8 Slice</b>	1,286,340	1,478,367	1,543,321	1,382,706	1,274,827	1,365,581	617,990	653,891	1,515,670	1,300,986	1,275,649	716,148	676,351	1,192,186	16,280,014
9 Slice Block	595,648	640,380	731,600	757,747	643,700	644,775	299,311	299,311	576,459	542,120	591,443	288,692	310,899	513,907	7,435,992
10 Slice Output from T1 System	690,692	837,987	811,721	624,958	631,127	720,806	318,679	354,579	939,211	758,866	684,206	427,456	365,453	678,279	8,844,022
<b>11 Direct Service Industries</b>	37,721	35,017	34,740	36,356	33,593	36,534	18,202	18,202	36,175	35,073	35,719	18,222	19,624	33,411	428,590
12 Direct Service Industry	37,721	35,017	34,740	36,356	33,593	36,534	18,202	18,202	36,175	35,073	35,719	18,222	19,624	33,411	428,590
<b>13 Contract Deliveries</b>	351,185	384,857	398,272	398,415	360,975	372,052	181,268	181,268	351,396	339,608	358,399	184,903	199,127	332,270	4,393,996
14 Exports	345,265	334,592	345,265	345,265	311,853	344,801	167,064	167,064	345,265	334,128	351,713	181,839	195,826	327,096	4,097,037
15 Intra-Regional Transfers (Out)	5,920	50,265	53,007	53,150	49,123	27,251	14,204	14,204	6,131	5,481	6,686	3,064	3,300	5,174	296,958
16 Firm Surplus Sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>17 Total Firm Obligations</b>	<b>3,228,037</b>	<b>3,688,567</b>	<b>3,988,415</b>	<b>3,870,882</b>	<b>3,451,373</b>	<b>3,530,502</b>	<b>1,613,821</b>	<b>1,649,721</b>	<b>3,401,359</b>	<b>3,147,807</b>	<b>3,436,467</b>	<b>1,763,621</b>	<b>1,804,400</b>	<b>3,128,820</b>	<b>41,703,791</b>
<b>Net Resources</b>															
<b>18 Hydro Resources</b>	2,889,858	3,606,321	3,501,240	2,643,508	2,670,770	3,053,854	1,369,363	1,533,824	4,443,488	3,754,806	3,048,760	1,872,491	1,584,368	2,914,650	38,887,302
19 Regulated Hydro - Net	2,729,103	3,470,979	3,411,155	2,592,885	2,613,654	2,936,698	1,265,292	1,416,926	4,100,501	3,416,887	2,859,438	1,790,785	1,496,998	2,760,206	36,861,509
20 Independent Hydro - Net	159,600	134,201	88,794	49,282	55,944	115,862	103,429	116,256	341,808	336,831	188,227	81,158	86,780	153,434	2,011,607
21 Small Hydro - Net	1,155	1,140	1,291	1,341	1,172	1,293	642	642	1,179	1,088	1,095	548	590	1,010	14,187

**Table 10.1.2**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>HLH-MWh</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
<b>22 Other Resources</b>	492,961	460,356	458,284	467,668	440,298	479,325	247,912	244,908	180,625	32,378	444,937	236,387	259,361	446,136	4,891,536
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	475,200	440,000	440,000	457,600	422,400	457,600	228,800	228,800	147,613	0	413,316	228,800	246,400	422,400	4,608,929
26 Renewable Resources	17,761	20,356	18,284	10,068	17,898	21,725	19,112	16,108	33,012	32,378	31,621	7,587	12,961	23,736	282,607
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>28 Contract Purchases</b>	149,548	140,418	137,108	142,365	127,225	137,252	67,833	68,516	140,908	133,866	136,641	69,546	73,091	126,749	1,651,067
29 Imports	432	400	400	416	384	416	208	208	416	400	416	208	224	384	4,912
30 Intra-Regional Transfers (In)	10,761	7,808	5,016	8,723	2,832	1,997	1,102	1,102	1,706	2,760	2,288	746	804	1,843	49,488
31 Non-Federal CER	102,892	95,600	95,582	99,840	92,160	99,630	49,712	49,712	99,424	95,600	99,424	49,712	53,536	91,776	1,174,600
32 Slice Transmission Loss Return	13,135	15,936	15,437	11,885	12,002	13,708	6,060	6,743	17,861	14,432	13,012	8,129	6,950	12,899	168,190
33 Augmentation Purchases	22,328	20,674	20,674	21,501	19,847	21,501	10,750	10,750	21,501	20,674	21,501	10,750	11,577	19,847	253,877
<b>34 Reserves &amp; Losses</b>	-105,753	-125,475	-122,255	-97,206	-96,608	-109,561	-50,333	-55,162	-142,897	-117,797	-108,915	-65,209	-57,424	-104,146	-1,358,743
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	-105,753	-125,475	-122,255	-97,206	-96,608	-109,561	-50,333	-55,162	-142,897	-117,797	-108,915	-65,209	-57,424	-104,146	-1,358,743
<b>40 Total Net Resources</b>	<b>3,426,615</b>	<b>4,081,620</b>	<b>3,974,377</b>	<b>3,156,335</b>	<b>3,141,684</b>	<b>3,560,869</b>	<b>1,634,776</b>	<b>1,792,085</b>	<b>4,622,124</b>	<b>3,803,252</b>	<b>3,521,423</b>	<b>2,113,215</b>	<b>1,859,397</b>	<b>3,383,389</b>	<b>44,071,162</b>
<b>41 Total Surplus/Deficit</b>	<b>198,577</b>	<b>393,053</b>	<b>-14,037</b>	<b>-714,546</b>	<b>-309,688</b>	<b>30,367</b>	<b>20,955</b>	<b>142,364</b>	<b>1,220,765</b>	<b>655,446</b>	<b>84,956</b>	<b>349,594</b>	<b>54,997</b>	<b>254,568</b>	<b>2,367,371</b>

**Table 10.1.3**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>LLH-MWh</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
<b>Firm Obligations</b>															
1 <b>Load Following</b>	848,141	987,645	1,177,764	1,127,229	937,320	905,435	487,021	440,638	955,838	924,866	1,121,356	479,377	504,607	939,662	11,836,900
2 Preference Customers	765,291	940,972	1,117,387	1,078,593	895,126	843,235	421,886	381,707	819,831	785,303	929,803	404,340	425,621	793,187	10,602,282
3 Federal Agencies	28,468	38,748	47,983	45,743	36,473	34,453	15,038	13,606	27,842	25,846	31,484	14,015	14,753	28,631	403,083
4 USBR	54,382	7,925	12,394	2,893	5,721	27,747	50,097	45,325	108,165	113,717	160,069	61,022	64,233	117,844	831,535
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 <b>Tier 1 Block</b>	143,201	227,332	230,912	250,602	213,012	225,542	57,325	51,866	35,800	0	85,921	49,707	52,324	166,472	1,790,015
7 Tier 1 Block	143,201	227,332	230,912	250,602	213,012	225,542	57,325	51,866	35,800	0	85,921	49,707	52,324	166,472	1,790,015
8 <b>Slice</b>	806,341	983,339	1,087,619	973,888	822,643	876,838	415,652	387,389	1,001,251	855,572	842,158	390,431	411,756	813,821	10,668,698
9 Slice Block	435,535	494,308	604,928	574,728	464,317	463,240	232,528	210,382	437,612	397,007	471,484	203,379	214,083	432,946	5,636,479
10 Slice Output from T1 System	370,805	489,031	482,690	399,159	358,327	413,598	183,124	177,007	563,639	458,565	370,674	187,053	197,673	380,875	5,032,219
11 <b>Direct Service Industries</b>	7,307	7,336	7,894	7,729	6,561	28,524	14,131	12,786	28,851	27,768	29,167	13,287	13,986	29,540	234,867
12 Direct Service Industry	7,307	7,336	7,894	7,729	6,561	28,524	14,131	12,786	28,851	27,768	29,167	13,287	13,986	29,540	234,867
13 <b>Contract Deliveries</b>	80,477	114,818	115,038	112,868	97,138	92,321	53,877	48,746	88,287	86,620	101,282	57,543	60,571	85,910	1,195,496
14 Exports	17,922	13,555	10,613	11,635	8,504	14,609	12,554	11,358	25,626	28,107	35,209	28,399	29,894	21,786	269,772
15 Intra-Regional Transfers (Out)	4,535	44,482	43,574	43,213	37,690	22,699	11,606	10,500	4,641	4,739	5,222	2,256	2,375	4,689	242,221
16 Firm Surplus Sale	58,020	56,782	60,850	58,020	50,944	55,013	29,718	26,887	58,020	53,775	60,850	26,887	28,302	59,435	683,503
17 <b>Total Firm Obligations</b>	<b>1,885,468</b>	<b>2,320,470</b>	<b>2,619,226</b>	<b>2,472,316</b>	<b>2,076,673</b>	<b>2,128,660</b>	<b>1,028,007</b>	<b>941,424</b>	<b>2,110,028</b>	<b>1,894,825</b>	<b>2,179,884</b>	<b>990,345</b>	<b>1,043,244</b>	<b>2,035,405</b>	<b>25,725,976</b>
<b>Net Resources</b>															
18 <b>Hydro Resources</b>	1,338,280	1,860,885	1,815,699	1,454,184	1,316,661	1,543,303	683,338	670,052	2,252,231	1,816,688	1,421,614	745,313	787,294	1,423,382	19,128,924
19 Regulated Hydro - Net	1,266,497	1,809,035	1,775,397	1,418,049	1,285,577	1,488,253	626,265	626,621	2,058,097	1,647,465	1,304,582	691,851	730,546	1,347,320	18,075,555
20 Independent Hydro - Net	70,906	50,945	39,222	35,091	30,206	54,083	56,561	42,961	193,205	168,397	116,127	53,062	56,328	75,179	1,042,272
21 Small Hydro - Net	877	905	1,080	1,044	878	967	512	470	930	826	906	400	421	884	11,097

**Table 10.1.3**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2018 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>LLH-MWh</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
22 <b>Other Resources</b>	376,051	378,589	396,178	370,018	327,722	357,010	197,435	177,805	386,842	358,527	403,855	173,874	185,857	385,621	4,475,383
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	360,800	353,100	378,400	360,800	316,800	342,100	184,800	167,200	360,800	334,400	378,400	167,200	176,000	369,600	4,250,400
26 Renewable Resources	15,251	25,489	17,778	9,218	10,922	14,910	12,635	10,605	26,042	24,127	25,455	6,674	9,857	16,021	224,983
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 <b>Contract Purchases</b>	15,957	20,569	19,020	16,935	9,873	17,099	9,750	9,037	27,664	24,939	25,883	10,519	11,088	21,068	239,402
29 Imports	328	321	344	328	288	311	168	152	328	304	344	152	160	336	3,864
30 Intra-Regional Transfers (In)	8,578	7,124	5,673	5,192	2,770	8,923	6,100	5,519	12,809	15,914	14,682	6,810	7,169	9,680	116,942
31 Non-Federal CER	0	3,824	3,824	3,824	0	0	0	0	3,808	0	3,808	0	0	3,808	22,896
32 Slice Transmission Loss Return	7,052	9,300	9,180	7,591	6,814	7,866	3,483	3,366	10,719	8,721	7,049	3,557	3,759	7,243	95,700
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 <b>Reserves &amp; Losses</b>	-51,990	-67,411	-66,589	-54,986	-49,337	-57,224	-26,623	-25,624	-80,220	-66,296	-55,832	-27,962	-29,562	-54,803	-714,461
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	-51,990	-67,411	-66,589	-54,986	-49,337	-57,224	-26,623	-25,624	-80,220	-66,296	-55,832	-27,962	-29,562	-54,803	-714,461
40 <b>Total Net Resources</b>	<b>1,678,298</b>	<b>2,192,632</b>	<b>2,164,308</b>	<b>1,786,152</b>	<b>1,604,919</b>	<b>1,860,188</b>	<b>863,900</b>	<b>831,269</b>	<b>2,586,516</b>	<b>2,133,858</b>	<b>1,795,520</b>	<b>901,744</b>	<b>954,677</b>	<b>1,775,268</b>	<b>23,129,248</b>
41 <b>Total Surplus/Deficit</b>	<b>-207,170</b>	<b>-127,838</b>	<b>-454,919</b>	<b>-686,165</b>	<b>-471,754</b>	<b>-268,472</b>	<b>-164,107</b>	<b>-110,155</b>	<b>476,489</b>	<b>239,032</b>	<b>-384,364</b>	<b>-88,601</b>	<b>-88,566</b>	<b>-260,137</b>	<b>-2,596,727</b>

**Table 10.1.3**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2019 Water Year: 1937**  
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S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>Firm Obligations</b>															
<b>1 Load Following</b>	815,072	981,468	1,169,030	1,120,926	928,452	920,944	440,092	440,092	944,323	947,709	1,068,950	471,858	496,693	923,871	11,669,478
2 Preference Customers	733,408	930,255	1,104,192	1,067,753	881,855	850,050	382,745	382,745	803,964	789,748	889,632	394,914	415,699	773,191	10,400,152
3 Federal Agencies	32,081	43,287	52,443	50,279	40,877	39,425	16,222	16,222	32,194	30,311	35,079	15,923	16,761	32,836	453,939
4 USBR	49,582	7,925	12,394	2,893	5,721	31,469	41,125	41,125	108,165	127,650	144,239	61,022	64,233	117,844	815,387
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>6 Tier 1 Block</b>	144,407	229,247	232,857	252,713	214,806	227,442	55,055	55,055	36,102	0	86,644	50,126	52,764	167,874	1,805,093
7 Tier 1 Block	144,407	229,247	232,857	252,713	214,806	227,442	55,055	55,055	36,102	0	86,644	50,126	52,764	167,874	1,805,093
<b>8 Slice</b>	795,326	995,686	1,106,076	994,735	839,263	914,087	398,616	396,164	981,592	800,808	828,217	396,403	418,677	826,754	10,692,405
9 Slice Block	430,181	513,894	629,187	597,454	482,772	506,835	218,725	218,725	454,515	433,687	466,330	210,963	222,067	449,675	5,835,011
10 Slice Output from T1 System	365,145	481,792	476,890	397,281	356,491	407,252	179,891	177,438	527,077	367,121	361,887	185,440	196,611	377,079	4,857,394
<b>11 Direct Service Industries</b>	27,736	28,274	30,539	29,039	25,229	28,524	13,459	13,459	28,851	27,768	29,167	13,287	13,986	29,540	338,857
12 Direct Service Industry	27,736	28,274	30,539	29,039	25,229	28,524	13,459	13,459	28,851	27,768	29,167	13,287	13,986	29,540	338,857
<b>13 Contract Deliveries</b>	21,298	58,098	54,319	53,653	45,740	23,064	10,980	10,980	4,645	4,890	10,163	16,170	17,021	4,689	335,711
14 Exports	16,908	13,637	10,745	10,440	8,051	214	0	0	0	0	5,084	13,904	14,636	0	93,619
15 Intra-Regional Transfers (Out)	4,389	44,460	43,574	43,213	37,690	22,850	10,980	10,980	4,645	4,890	5,079	2,266	2,385	4,689	242,092
16 Firm Surplus Sale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>17 Total Firm Obligations</b>	<b>1,803,838</b>	<b>2,292,772</b>	<b>2,592,821</b>	<b>2,451,065</b>	<b>2,053,490</b>	<b>2,114,061</b>	<b>918,202</b>	<b>915,750</b>	<b>1,995,513</b>	<b>1,781,175</b>	<b>2,023,142</b>	<b>947,844</b>	<b>999,141</b>	<b>1,952,728</b>	<b>24,841,543</b>
<b>Net Resources</b>															
<b>18 Hydro Resources</b>	1,327,238	1,829,181	1,790,557	1,446,692	1,309,246	1,500,954	678,030	668,587	2,332,583	1,752,743	1,420,032	738,487	782,974	1,407,250	18,984,554
19 Regulated Hydro - Net	1,257,666	1,777,331	1,750,255	1,410,557	1,278,161	1,444,616	624,317	625,156	2,138,449	1,578,765	1,304,732	685,025	726,226	1,331,188	17,932,444
20 Independent Hydro - Net	68,738	50,945	39,222	35,091	30,206	55,329	53,243	42,961	193,205	173,110	114,436	53,062	56,328	75,179	1,041,055
21 Small Hydro - Net	835	905	1,080	1,044	878	1,009	470	470	930	868	864	400	421	884	11,055

**Table 10.1.3**  
**Loads and Resources - Federal System**  
**Fiscal Year: 2019 Water Year: 1937**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
<b>22 Other Resources</b>	358,451	378,590	396,178	370,018	327,722	374,610	179,835	177,805	142,429	24,127	351,339	173,874	185,857	385,621	3,826,455
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	343,200	353,100	378,400	360,800	316,800	359,700	167,200	167,200	116,387	0	325,884	167,200	176,000	369,600	3,601,471
26 Renewable Resources	15,251	25,490	17,778	9,218	10,922	14,910	12,635	10,605	26,042	24,127	25,455	6,674	9,857	16,021	224,984
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>28 Contract Purchases</b>	31,603	37,022	36,689	33,857	23,741	26,379	12,204	12,158	32,998	25,825	29,693	12,274	12,947	30,142	357,534
29 Imports	312	321	344	328	288	327	152	152	328	320	328	152	160	336	3,848
30 Intra-Regional Transfers (In)	8,222	7,124	5,673	5,192	1,788	1,406	775	775	1,870	1,984	1,706	739	778	1,445	39,478
31 Non-Federal CER	0	3,824	3,824	3,829	0	0	0	0	3,824	0	3,824	0	0	3,824	22,949
32 Slice Transmission Loss Return	6,944	9,162	9,069	7,555	6,780	7,745	3,421	3,374	10,024	6,982	6,882	3,527	3,739	7,171	92,375
33 Augmentation Purchases	16,126	16,591	17,780	16,953	14,885	16,901	7,856	7,856	16,953	16,539	16,953	7,856	8,270	17,366	198,884
<b>34 Reserves &amp; Losses</b>	-51,578	-66,958	-66,367	-55,266	-49,529	-56,775	-26,005	-25,674	-75,506	-54,531	-54,306	-27,812	-29,489	-54,594	-694,389
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	-51,578	-66,958	-66,367	-55,266	-49,529	-56,775	-26,005	-25,674	-75,506	-54,531	-54,306	-27,812	-29,489	-54,594	-694,389
<b>40 Total Net Resources</b>	<b>1,665,715</b>	<b>2,177,835</b>	<b>2,157,057</b>	<b>1,795,302</b>	<b>1,611,180</b>	<b>1,845,168</b>	<b>844,064</b>	<b>832,876</b>	<b>2,432,504</b>	<b>1,748,163</b>	<b>1,746,757</b>	<b>896,823</b>	<b>952,290</b>	<b>1,768,420</b>	<b>22,474,153</b>
<b>41 Total Surplus/Deficit</b>	<b>-138,124</b>	<b>-114,937</b>	<b>-435,765</b>	<b>-655,764</b>	<b>-442,309</b>	<b>-268,892</b>	<b>-74,139</b>	<b>-82,874</b>	<b>436,991</b>	<b>-33,012</b>	<b>-276,385</b>	<b>-51,021</b>	<b>-46,851</b>	<b>-184,308</b>	<b>-2,367,390</b>

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**11. FEDERAL LOADS AND RESOURCES SURPLUS/DEFICIT BY  
WATER YEAR .....127**

**Table 11.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
1 1929 Federal Report Surplus Deficit	-19	74	-651	-767	-846	-248	-605	986	1,970	2,062	-620	474	-100	164	127
2 1930 Federal Report Surplus Deficit	54	218	-615	-1,621	-519	-383	376	1,809	1,454	-85	900	855	28	-6	79
3 1931 Federal Report Surplus Deficit	-21	246	-476	-1,171	-1,613	-714	118	-690	2,323	230	739	770	73	-195	-31
4 1932 Federal Report Surplus Deficit	-129	-143	-560	-2,003	-1,670	1,062	3,849	4,815	5,820	5,256	1,935	1,118	960	488	1,296
5 1933 Federal Report Surplus Deficit	-56	-351	752	2,051	2,122	2,128	1,260	1,905	3,824	6,587	3,861	2,642	1,840	290	2,085
6 1934 Federal Report Surplus Deficit	671	2,371	4,331	4,745	4,125	4,944	4,844	4,789	4,232	3,868	1,250	184	-208	-165	2,923
7 1935 Federal Report Surplus Deficit	-119	-718	-649	1,746	1,640	1,880	197	2,127	3,302	2,983	2,667	2,197	232	-367	1,227
8 1936 Federal Report Surplus Deficit	-15	22	-958	-1,607	-854	-139	408	3,834	5,727	4,836	1,226	649	-49	-49	888
9 1937 Federal Report Surplus Deficit	-21	303	-679	-1,913	-1,190	-458	-283	-15	2,634	1,554	-330	670	-139	-66	0
10 1938 Federal Report Surplus Deficit	-11	156	200	1,239	1,695	2,294	3,137	5,428	5,150	3,985	2,192	160	-285	239	1,776
11 1939 Federal Report Surplus Deficit	-63	-28	-764	157	-9	348	1,497	3,200	3,616	1,378	939	574	-131	110	690
12 1940 Federal Report Surplus Deficit	8	391	-440	352	-104	2,875	1,710	2,460	3,341	1,220	713	125	-423	-45	860
13 1941 Federal Report Surplus Deficit	-225	130	-135	-976	-674	-180	-499	558	2,696	1,315	695	783	33	160	275
14 1942 Federal Report Surplus Deficit	-206	641	753	1,561	1,008	1,236	439	2,185	3,177	3,357	2,758	1,203	672	681	1,437
15 1943 Federal Report Surplus Deficit	-65	-430	-245	2,237	1,899	2,472	5,298	5,703	4,451	6,442	4,148	1,963	653	-146	2,293
16 1944 Federal Report Surplus Deficit	-108	141	-673	-675	-498	-527	-704	687	1,252	-133	-30	794	-226	-143	-92
17 1945 Federal Report Surplus Deficit	-118	105	-519	-1,391	-952	-472	-601	-1,150	4,074	4,356	-139	449	-110	-85	350
18 1946 Federal Report Surplus Deficit	-120	228	109	1,011	1,019	2,046	3,806	5,518	5,240	4,061	3,199	1,473	903	327	1,916
19 1947 Federal Report Surplus Deficit	-87	304	2,885	3,298	2,959	3,132	2,647	2,913	5,273	4,330	2,784	1,313	504	100	2,388
20 1948 Federal Report Surplus Deficit	2,240	1,484	1,501	3,122	1,960	2,053	1,825	4,159	6,244	6,397	3,612	2,985	2,155	653	2,909
21 1949 Federal Report Surplus Deficit	293	-7	269	1,014	665	2,980	2,661	4,723	5,872	4,249	306	114	-616	-138	1,581
22 1950 Federal Report Surplus Deficit	-177	-61	-247	2,960	3,375	3,253	4,135	3,757	4,473	6,343	4,657	2,993	2,073	491	2,620
23 1951 Federal Report Surplus Deficit	970	1,819	3,007	4,549	4,710	5,347	4,495	4,447	5,274	4,251	3,512	2,014	533	165	3,271
24 1952 Federal Report Surplus Deficit	1,760	811	1,601	2,801	2,396	2,156	4,261	5,947	6,357	4,688	2,571	1,228	184	-409	2,545
25 1953 Federal Report Surplus Deficit	-51	-131	-876	534	1,682	1,311	596	1,651	4,044	6,634	4,157	2,002	957	272	1,677
26 1954 Federal Report Surplus Deficit	233	300	993	2,704	2,768	3,080	2,138	2,912	5,085	5,616	4,552	3,300	3,060	2,240	2,773
27 1955 Federal Report Surplus Deficit	360	904	924	100	204	-359	55	1,402	3,623	6,464	4,372	2,693	1,198	32	1,613
28 1956 Federal Report Surplus Deficit	524	1,407	2,900	4,304	4,322	4,342	3,815	5,678	6,185	6,193	3,647	2,601	1,699	288	3,411
29 1957 Federal Report Surplus Deficit	464	-32	1,142	1,285	682	1,952	3,501	2,637	6,613	6,619	1,925	848	322	144	2,043
30 1958 Federal Report Surplus Deficit	-95	176	-497	1,683	1,539	1,922	1,603	3,438	5,864	5,769	1,474	1,123	131	-127	1,734
31 1959 Federal Report Surplus Deficit	121	870	2,404	3,775	3,619	3,610	3,145	2,711	4,299	5,748	3,949	2,707	2,109	2,592	3,021
32 1960 Federal Report Surplus Deficit	2,961	2,443	2,227	2,056	1,586	1,986	5,779	4,042	3,393	4,927	2,684	1,483	174	-164	2,486
33 1961 Federal Report Surplus Deficit	173	180	424	1,766	2,347	3,640	2,361	2,369	4,983	5,885	1,795	1,259	361	-76	2,019
34 1962 Federal Report Surplus Deficit	-240	138	144	1,394	1,501	323	4,182	5,491	4,463	3,701	1,866	1,170	652	-229	1,561
35 1963 Federal Report Surplus Deficit	718	976	2,071	2,303	1,711	1,340	429	1,736	3,923	3,728	2,461	1,117	335	420	1,790
36 1964 Federal Report Surplus Deficit	-149	-21	375	302	391	417	2,701	1,591	4,268	6,444	4,239	2,664	1,834	918	1,802
37 1965 Federal Report Surplus Deficit	877	637	3,168	4,966	5,718	4,627	1,788	5,649	5,526	4,532	2,618	2,272	1,765	-106	3,181
38 1966 Federal Report Surplus Deficit	394	104	664	1,007	987	612	4,193	2,423	2,696	3,447	2,572	1,832	202	-102	1,390
39 1967 Federal Report Surplus Deficit	-138	-116	945	3,256	3,024	3,275	1,419	-36	3,834	6,068	3,761	2,089	1,259	292	2,211
40 1968 Federal Report Surplus Deficit	290	365	685	2,462	2,232	2,458	83	1,089	2,440	5,070	2,919	1,955	1,070	1,417	1,866

**Table 11.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
41 1969 Federal Report Surplus Deficit	1,004	1,487	1,610	3,829	4,264	3,373	4,045	5,492	6,008	4,981	2,761	924	259	46	2,882
42 1970 Federal Report Surplus Deficit	288	240	-259	1,619	1,271	1,422	844	1,473	4,156	5,854	937	869	84	-110	1,417
43 1971 Federal Report Surplus Deficit	-120	48	193	4,216	5,416	4,485	3,893	4,441	6,083	6,403	4,211	2,810	2,562	511	3,177
44 1972 Federal Report Surplus Deficit	489	177	993	4,054	4,698	5,866	5,402	3,352	5,888	6,025	4,112	3,099	2,768	643	3,349
45 1973 Federal Report Surplus Deficit	427	179	624	1,328	182	121	-1,247	710	2,653	684	667	447	-258	-121	554
46 1974 Federal Report Surplus Deficit	-92	-99	1,466	5,406	4,976	5,512	4,534	5,380	5,555	6,129	4,745	2,895	2,742	566	3,488
47 1975 Federal Report Surplus Deficit	-205	101	-322	1,716	1,865	2,227	630	1,489	4,868	6,348	4,736	2,058	1,523	713	2,076
48 1976 Federal Report Surplus Deficit	1,129	1,742	3,872	3,823	3,546	4,401	4,607	4,175	6,101	5,075	3,804	3,574	3,587	3,090	3,716
49 1977 Federal Report Surplus Deficit	491	162	-649	-509	-239	-319	-1,012	214	865	-271	17	764	-166	-625	-96
50 1978 Federal Report Surplus Deficit	-487	179	581	1,288	1,445	1,333	3,963	2,850	4,653	3,173	2,680	846	107	1,551	1,686
51 1979 Federal Report Surplus Deficit	514	177	-525	649	-317	1,582	249	1,955	4,698	2,671	-304	482	-114	124	887
52 1980 Federal Report Surplus Deficit	-72	138	-947	207	-199	51	1,637	3,052	5,780	5,139	1,628	345	-96	175	1,200
53 1981 Federal Report Surplus Deficit	-120	86	2,079	3,334	3,156	1,370	-832	1,718	3,979	6,342	3,412	2,874	1,971	286	2,228
54 1982 Federal Report Surplus Deficit	136	438	702	2,548	5,286	5,355	3,839	3,412	5,656	6,283	4,755	2,804	2,473	1,338	3,216
55 1983 Federal Report Surplus Deficit	1,030	482	1,215	3,135	3,507	4,348	2,863	4,907	5,042	3,973	2,868	1,393	644	2,761	
56 1984 Federal Report Surplus Deficit	306	2,039	1,508	2,466	2,790	2,828	4,402	4,858	5,060	6,068	3,703	2,339	795	625	2,791
57 1985 Federal Report Surplus Deficit	370	472	592	882	588	618	2,495	3,490	4,234	2,504	684	-47	-716	50	1,133
58 1986 Federal Report Surplus Deficit	-104	1,465	779	2,258	3,047	5,185	4,479	4,912	3,764	4,317	1,653	699	-4	-262	2,251
59 1987 Federal Report Surplus Deficit	-287	348	674	390	-381	1,144	-159	1,468	3,933	2,340	0	115	-564	-218	705
60 1988 Federal Report Surplus Deficit	-116	87	-933	-1,030	-1,417	-136	-257	1,297	2,409	1,071	975	667	-71	-132	142
61 1989 Federal Report Surplus Deficit	-178	403	-197	-537	-835	1,085	1,764	5,072	3,934	2,761	508	297	-231	-49	867
62 1990 Federal Report Surplus Deficit	9	293	1,032	1,885	2,298	2,587	1,555	4,577	3,179	5,029	2,336	2,055	1,423	-116	1,939
63 1991 Federal Report Surplus Deficit	-210	1,739	1,796	2,915	2,587	3,093	2,661	2,263	4,025	4,741	3,763	2,849	1,530	-138	2,412
64 1992 Federal Report Surplus Deficit	48	153	-874	-145	-27	1,359	-919	632	2,355	632	31	356	-352	-365	255
65 1993 Federal Report Surplus Deficit	-64	264	-476	-1,313	-1,526	472	730	1,773	4,510	3,511	949	762	194	173	696
66 1994 Federal Report Surplus Deficit	1	429	-286	-1,547	-928	-407	-348	1,248	3,267	2,430	745	520	-276	-27	358
67 1995 Federal Report Surplus Deficit	-64	-245	-485	615	1,316	2,330	908	1,553	3,659	5,234	2,003	699	137	490	1,371
68 1996 Federal Report Surplus Deficit	788	2,724	5,091	5,088	5,337	5,996	4,120	5,805	5,641	5,100	3,856	2,671	1,525	278	3,907
69 1997 Federal Report Surplus Deficit	191	365	1,671	5,388	5,550	5,697	4,399	5,766	5,939	6,104	4,140	2,550	2,625	1,306	3,657
70 1998 Federal Report Surplus Deficit	2,438	1,338	595	1,239	1,280	1,258	1,314	2,542	6,067	6,022	2,562	1,624	317	-110	2,136
71 1999 Federal Report Surplus Deficit	-37	-240	1,364	3,877	4,132	4,679	2,571	4,041	4,550	6,043	4,149	3,338	2,688	674	2,954
72 2000 Federal Report Surplus Deficit	165	2,233	2,134	1,806	1,893	1,981	3,822	5,134	4,679	2,271	2,201	1,374	-253	-352	2,001
73 2001 Federal Report Surplus Deficit	-26	32	-637	-719	-518	-195	-789	434	1,790	-746	179	823	-262	-553	-103
74 2002 Federal Report Surplus Deficit	-553	114	-365	-761	-509	408	1,389	3,945	3,653	5,726	3,305	1,098	307	131	1,212
75 2003 Federal Report Surplus Deficit	68	341	-480	-753	-883	1,568	1,387	2,156	3,544	4,737	644	234	-545	-419	836
76 2004 Federal Report Surplus Deficit	-119	523	55	141	-644	871	738	1,674	3,331	2,428	992	611	202	845	844
77 2005 Federal Report Surplus Deficit	487	94	914	1,045	1,060	89	-656	1,192	3,841	2,954	1,413	818	-222	27	1,041
78 2006 Federal Report Surplus Deficit	-390	223	634	2,181	2,818	2,226	4,407	5,137	5,760	5,592	1,953	396	-93	-332	2,121
79 2007 Federal Report Surplus Deficit	56	453	141	1,719	1,397	2,617	3,053	2,173	3,892	3,535	2,284	613	-273	-482	1,533
80 2008 Federal Report Surplus Deficit	64	473	-674	-140	174	493	889	8	5,040	6,586	2,788	1,299	1,213	-297	1,355
<b>Ranked Averages</b>															
<b>81 Bottom 10 pct</b>	<b>29</b>	<b>158</b>	<b>-664</b>	<b>-1,051</b>	<b>-855</b>	<b>-373</b>	<b>-395</b>	<b>590</b>	<b>1,837</b>	<b>460</b>	<b>229</b>	<b>727</b>	<b>-108</b>	<b>-195</b>	<b>3</b>
<b>82 Middle 80 pct</b>	<b>215</b>	<b>433</b>	<b>552</b>	<b>1,429</b>	<b>1,419</b>	<b>1,892</b>	<b>1,990</b>	<b>2,932</b>	<b>4,406</b>	<b>4,506</b>	<b>2,314</b>	<b>1,363</b>	<b>571</b>	<b>208</b>	<b>1,733</b>
<b>83 Top 10 pct</b>	<b>517</b>	<b>1,072</b>	<b>2,463</b>	<b>4,395</b>	<b>4,803</b>	<b>5,315</b>	<b>4,401</b>	<b>4,752</b>	<b>5,780</b>	<b>5,645</b>	<b>4,071</b>	<b>2,776</b>	<b>2,244</b>	<b>959</b>	<b>3,502</b>

**Table 11.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
1 1929 Federal Report Surplus Deficit	83	157	-576	-698	-765	-117	-470	1,167	1,564	1,342	-549	680	105	329	128
2 1930 Federal Report Surplus Deficit	156	302	-540	-1,550	-445	-245	512	1,989	1,045	-776	976	1,027	198	160	80
3 1931 Federal Report Surplus Deficit	81	329	-402	-1,100	-1,539	-579	254	-509	1,916	-457	819	934	236	-29	-30
4 1932 Federal Report Surplus Deficit	-27	-60	-486	-1,934	-1,596	1,186	3,964	4,843	5,443	4,575	2,000	1,275	1,120	651	1,290
5 1933 Federal Report Surplus Deficit	46	-267	827	1,986	2,253	2,242	1,746	2,068	3,452	6,133	4,237	2,797	1,997	449	2,137
6 1934 Federal Report Surplus Deficit	773	2,454	4,453	4,868	4,430	4,859	4,914	4,697	3,968	2,980	1,325	346	-46	0	2,913
7 1935 Federal Report Surplus Deficit	-17	-635	-575	1,673	1,764	2,154	333	2,308	2,857	2,269	2,752	2,354	391	-203	1,226
8 1936 Federal Report Surplus Deficit	88	105	-884	-1,538	-774	-2	543	4,013	5,376	4,065	1,302	812	113	118	887
9 1937 Federal Report Surplus Deficit	81	386	-605	-1,842	-1,119	-321	-148	165	2,228	864	-257	829	21	98	0
10 1938 Federal Report Surplus Deficit	91	239	274	1,302	1,777	2,381	3,299	5,607	4,907	3,297	2,257	319	-125	403	1,786
11 1939 Federal Report Surplus Deficit	40	56	-689	226	65	485	1,632	3,334	3,218	640	1,012	735	31	275	685
12 1940 Federal Report Surplus Deficit	110	474	-365	423	-32	2,994	1,846	2,641	2,916	531	792	289	-260	122	858
13 1941 Federal Report Surplus Deficit	-123	213	-60	-907	-593	-48	-367	738	2,294	626	772	947	195	323	277
14 1942 Federal Report Surplus Deficit	-104	724	828	1,630	1,082	1,373	574	2,365	2,765	2,748	2,776	1,364	911	841	1,441
15 1943 Federal Report Surplus Deficit	37	-347	-170	2,306	1,974	2,633	5,419	5,832	4,053	5,722	4,111	2,113	808	14	2,280
16 1944 Federal Report Surplus Deficit	-6	225	-598	-606	-424	-390	-568	867	851	-824	44	957	-64	24	-91
17 1945 Federal Report Surplus Deficit	-16	188	-444	-1,320	-878	-335	-465	-973	3,681	3,708	-73	608	51	78	354
18 1946 Federal Report Surplus Deficit	-18	311	184	1,080	1,093	2,152	3,906	5,633	5,042	3,383	3,336	1,674	1,103	486	1,937
19 1947 Federal Report Surplus Deficit	15	387	2,976	3,417	3,042	3,254	2,691	3,033	4,907	3,660	2,846	1,484	673	258	2,392
20 1948 Federal Report Surplus Deficit	2,350	1,567	1,575	3,231	2,037	2,190	2,018	4,304	5,986	5,745	3,755	3,196	2,359	812	2,940
21 1949 Federal Report Surplus Deficit	395	76	344	1,083	746	3,079	2,862	4,875	5,457	3,563	377	272	-457	24	1,579
22 1950 Federal Report Surplus Deficit	-75	22	-173	2,907	3,577	3,376	4,174	3,893	4,119	5,773	5,035	3,159	2,241	649	2,653
23 1951 Federal Report Surplus Deficit	1,072	1,902	3,116	4,626	4,797	5,373	4,569	4,552	5,064	3,571	3,876	1,913	705	321	3,292
24 1952 Federal Report Surplus Deficit	1,870	894	1,675	2,866	2,470	2,294	4,394	5,983	6,150	4,041	2,636	1,383	342	-245	2,559
25 1953 Federal Report Surplus Deficit	51	-48	-801	528	1,812	1,474	732	1,832	3,574	6,112	4,450	1,883	1,149	435	1,694
26 1954 Federal Report Surplus Deficit	335	383	1,068	2,727	2,874	3,253	2,302	3,040	4,891	4,876	4,982	3,531	3,291	2,396	2,824
27 1955 Federal Report Surplus Deficit	462	987	999	169	278	-221	191	1,582	3,124	5,866	4,762	2,897	1,373	193	1,642
28 1956 Federal Report Surplus Deficit	626	1,490	3,003	4,428	4,496	4,442	3,842	5,782	5,997	5,561	4,002	2,495	1,862	448	3,451
29 1957 Federal Report Surplus Deficit	566	51	1,216	1,353	762	2,051	3,646	2,810	6,316	5,871	1,996	1,007	483	308	2,045
30 1958 Federal Report Surplus Deficit	7	259	-423	1,752	1,613	2,060	1,739	3,618	5,439	5,062	1,544	1,283	292	37	1,731
31 1959 Federal Report Surplus Deficit	224	954	2,463	3,903	3,704	3,734	3,245	2,839	4,081	5,124	4,326	2,940	2,343	2,746	3,073
32 1960 Federal Report Surplus Deficit	3,087	2,526	2,301	2,121	1,660	2,182	5,877	4,147	2,961	4,297	2,761	1,637	328	-3	2,491
33 1961 Federal Report Surplus Deficit	275	264	498	1,834	2,398	3,791	2,510	2,490	4,724	5,103	1,864	1,454	559	87	2,025
34 1962 Federal Report Surplus Deficit	-138	221	219	1,463	1,575	460	4,231	5,412	4,103	3,028	1,932	1,326	809	-67	1,551
35 1963 Federal Report Surplus Deficit	820	1,059	2,145	2,372	1,785	1,477	565	1,917	3,462	3,053	2,524	1,309	527	581	1,789
36 1964 Federal Report Surplus Deficit	-47	62	449	371	465	555	2,840	1,768	3,788	5,897	4,579	2,822	2,032	1,074	1,831
37 1965 Federal Report Surplus Deficit	980	720	3,271	5,081	5,790	4,786	1,933	5,672	5,267	4,037	2,652	2,422	1,912	49	3,206
38 1966 Federal Report Surplus Deficit	496	187	739	1,076	1,061	749	4,316	2,604	2,255	2,700	2,675	2,024	394	59	1,387
39 1967 Federal Report Surplus Deficit	-36	-33	1,020	3,238	3,314	3,345	1,502	145	3,475	5,526	4,145	1,983	1,426	455	2,244
40 1968 Federal Report Surplus Deficit	392	448	760	2,531	2,307	2,596	219	1,270	1,984	4,466	3,097	2,141	1,252	1,571	1,879

**Table 11.1.1**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>Energy-aMW - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
41 1969 Federal Report Surplus Deficit	1,106	1,570	1,685	3,907	4,511	3,572	4,215	5,388	5,823	4,316	2,826	1,108	445	207	2,913
42 1970 Federal Report Surplus Deficit	390	324	-185	1,633	1,410	1,640	894	1,652	3,605	5,329	1,000	1,020	241	52	1,421
43 1971 Federal Report Surplus Deficit	-18	132	267	4,218	5,461	4,552	4,136	4,641	5,877	5,770	4,532	2,730	2,754	670	3,202
44 1972 Federal Report Surplus Deficit	591	261	1,068	4,104	4,870	6,096	5,512	3,496	5,683	5,524	4,510	3,281	2,953	802	3,422
45 1973 Federal Report Surplus Deficit	530	262	699	1,397	256	259	-1,111	890	2,250	-14	741	613	-92	43	555
46 1974 Federal Report Surplus Deficit	10	-16	1,541	5,529	5,332	5,701	4,636	5,362	5,339	5,633	5,133	3,082	2,931	725	3,570
47 1975 Federal Report Surplus Deficit	-103	185	-247	1,785	1,939	2,420	726	1,652	4,580	5,920	4,857	1,960	1,667	867	2,102
48 1976 Federal Report Surplus Deficit	1,231	1,825	3,981	3,950	3,591	4,514	4,655	4,410	5,893	4,516	4,182	3,770	3,774	3,246	3,773
49 1977 Federal Report Surplus Deficit	594	245	-574	-440	-165	-182	-877	394	464	-956	98	928	-3	-459	-94
50 1978 Federal Report Surplus Deficit	-385	262	655	1,407	1,519	1,448	4,079	3,003	4,413	2,486	2,743	998	257	1,705	1,699
51 1979 Federal Report Surplus Deficit	616	260	-450	720	-239	1,713	412	2,109	4,264	1,983	-233	642	45	287	885
52 1980 Federal Report Surplus Deficit	30	221	-872	275	-125	189	1,774	3,233	5,587	4,555	1,693	501	61	333	1,226
53 1981 Federal Report Surplus Deficit	-17	169	2,142	3,407	3,230	1,506	-626	1,834	3,556	5,573	3,790	3,108	2,192	447	2,251
54 1982 Federal Report Surplus Deficit	238	521	777	2,610	5,428	5,640	3,951	3,583	5,427	5,681	5,035	2,955	2,628	1,497	3,270
55 1983 Federal Report Surplus Deficit	1,132	565	1,290	3,212	3,590	4,573	3,033	2,796	4,499	4,546	4,256	2,791	1,582	802	2,795
56 1984 Federal Report Surplus Deficit	408	2,122	1,583	2,535	2,864	2,934	4,526	5,017	4,671	5,451	3,730	2,495	953	785	2,790
57 1985 Federal Report Surplus Deficit	472	555	667	845	789	755	2,627	3,667	3,781	1,800	760	113	-557	206	1,128
58 1986 Federal Report Surplus Deficit	-2	1,548	854	2,327	3,098	5,500	4,535	5,110	3,362	3,585	1,727	859	157	-101	2,259
59 1987 Federal Report Surplus Deficit	-185	432	749	459	-300	1,275	84	1,578	3,654	1,653	77	279	-401	-55	718
60 1988 Federal Report Surplus Deficit	-14	170	-858	-961	-1,343	2	-122	1,477	2,003	380	1,052	831	92	36	143
61 1989 Federal Report Surplus Deficit	-76	486	-122	-468	-760	1,238	1,837	5,203	3,510	2,073	577	454	-77	110	861
62 1990 Federal Report Surplus Deficit	111	376	1,106	1,954	2,382	2,720	1,649	4,669	2,741	4,284	2,399	2,265	1,614	46	1,930
63 1991 Federal Report Surplus Deficit	-108	1,822	1,870	2,961	2,768	3,204	2,737	2,392	3,720	4,027	4,128	3,001	1,687	23	2,443
64 1992 Federal Report Surplus Deficit	150	236	-799	-74	45	1,496	-783	812	1,941	-52	108	520	-189	-199	256
65 1993 Federal Report Surplus Deficit	38	347	-401	-1,242	-1,452	609	866	1,965	4,122	2,822	1,012	969	402	330	701
66 1994 Federal Report Surplus Deficit	103	512	-211	-1,476	-857	-270	-173	1,389	2,861	1,738	821	719	-79	139	362
67 1995 Federal Report Surplus Deficit	38	-162	-411	683	1,390	2,467	1,043	1,733	3,263	4,677	2,066	873	315	651	1,383
68 1996 Federal Report Surplus Deficit	891	2,807	5,203	5,211	5,495	5,840	4,160	5,741	5,459	4,600	4,211	2,823	1,681	437	3,940
69 1997 Federal Report Surplus Deficit	293	448	1,745	5,487	5,740	5,977	4,482	5,795	5,767	5,617	4,487	2,699	2,771	1,462	3,731
70 1998 Federal Report Surplus Deficit	2,549	1,421	669	1,308	1,354	1,395	1,449	2,722	5,650	5,422	2,625	1,789	485	53	2,143
71 1999 Federal Report Surplus Deficit	65	-157	1,438	3,952	4,256	4,794	2,813	4,171	4,129	5,410	4,539	3,490	2,843	837	2,988
72 2000 Federal Report Surplus Deficit	267	2,316	2,206	1,875	1,967	2,118	3,913	5,192	4,350	1,580	2,274	1,537	-91	-189	2,001
73 2001 Federal Report Surplus Deficit	76	115	-562	-651	-444	-58	-653	614	1,384	-1,437	256	987	-99	-385	-102
74 2002 Federal Report Surplus Deficit	-451	197	-291	-692	-435	545	1,565	4,086	3,214	5,046	3,474	1,264	473	294	1,219
75 2003 Federal Report Surplus Deficit	170	424	-406	-682	-809	1,702	1,550	2,318	3,121	4,132	720	398	-382	-252	843
76 2004 Federal Report Surplus Deficit	-17	607	130	210	-570	1,008	899	1,838	2,881	1,734	1,061	770	359	1,000	839
77 2005 Federal Report Surplus Deficit	589	177	989	1,114	1,134	239	-543	1,385	3,431	2,229	1,484	1,058	19	189	1,046
78 2006 Federal Report Surplus Deficit	-288	306	708	2,250	2,892	2,363	4,518	5,230	5,310	4,853	2,025	556	70	-166	2,109
79 2007 Federal Report Surplus Deficit	158	536	216	1,788	1,477	2,748	3,206	2,353	3,447	2,846	2,361	776	-110	-315	1,531
80 2008 Federal Report Surplus Deficit	166	557	-600	-71	248	630	1,036	183	4,611	6,115	2,854	1,455	1,370	-138	1,371
<b>Ranked Averages</b>															
81 <b>Bottom 10 pct</b>	<b>131</b>	<b>241</b>	<b>-589</b>	<b>-981</b>	<b>-781</b>	<b>-236</b>	<b>-259</b>	<b>770</b>	<b>1,432</b>	<b>-233</b>	<b>305</b>	<b>897</b>	<b>61</b>	<b>-28</b>	<b>4</b>
82 <b>Middle 80 pct</b>	<b>318</b>	<b>516</b>	<b>627</b>	<b>1,490</b>	<b>1,514</b>	<b>2,030</b>	<b>2,128</b>	<b>3,071</b>	<b>4,035</b>	<b>3,849</b>	<b>2,446</b>	<b>1,514</b>	<b>744</b>	<b>369</b>	<b>1,743</b>
83 <b>Top 10 pct</b>	<b>619</b>	<b>1,155</b>	<b>2,554</b>	<b>4,493</b>	<b>4,969</b>	<b>5,448</b>	<b>4,476</b>	<b>4,840</b>	<b>5,579</b>	<b>5,088</b>	<b>4,430</b>	<b>2,877</b>	<b>2,413</b>	<b>1,117</b>	<b>3,556</b>

**Table 11.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1 1929 Federal Report Surplus Deficit	198,963	233,973	-37,140	-136,833	-156,483	20,490	-17,064	305,847	1,173,904	1,064,884	-67,114	275,146	43,976	315,941	3,218,488
2 1930 Federal Report Surplus Deficit	241,900	314,387	-4,656	-601,099	-20,871	-39,526	206,290	513,544	943,968	74,238	750,635	378,491	85,112	244,199	3,086,612
3 1931 Federal Report Surplus Deficit	192,137	316,069	56,228	-361,247	-536,845	-208,954	145,650	-92,404	1,352,754	261,374	673,558	361,881	129,698	143,903	2,433,802
4 1932 Federal Report Surplus Deficit	135,571	124,774	5,440	-800,480	-578,209	583,940	1,006,080	1,003,713	2,631,744	2,296,299	1,076,883	441,600	408,008	497,426	8,832,788
5 1933 Federal Report Surplus Deficit	176,865	-9,344	684,368	1,031,917	1,020,724	1,153,118	419,273	514,477	1,869,256	2,651,940	1,477,754	593,947	556,855	406,986	12,548,137
6 1934 Federal Report Surplus Deficit	600,599	1,289,396	1,836,232	1,866,595	1,550,854	2,162,677	1,152,579	967,215	1,865,556	1,657,344	757,174	203,013	85,658	177,729	16,172,621
7 1935 Federal Report Surplus Deficit	145,733	-175,029	-42,106	897,427	951,025	1,042,758	167,979	537,913	1,673,072	1,462,414	1,212,586	538,560	187,501	41,448	8,641,279
8 1936 Federal Report Surplus Deficit	201,535	221,745	-180,487	-574,877	-158,159	62,467	203,265	981,288	2,680,950	2,118,129	851,591	329,759	64,687	210,748	7,012,641
9 1937 Federal Report Surplus Deficit	191,676	346,010	-50,366	-737,167	-328,172	-72,065	62,098	104,736	1,483,402	880,063	138,953	329,922	35,202	212,431	2,596,723
10 1938 Federal Report Surplus Deficit	205,182	256,171	397,726	954,589	951,473	1,236,663	814,408	1,150,230	2,233,321	1,885,959	1,135,565	191,937	45,709	369,003	11,827,938
11 1939 Federal Report Surplus Deficit	165,967	195,045	-97,324	378,920	245,381	317,059	495,587	781,484	1,885,605	862,382	794,564	310,069	43,349	297,953	6,676,042
12 1940 Federal Report Surplus Deficit	202,807	375,101	50,212	480,878	183,659	1,505,842	529,643	674,349	1,786,394	759,800	653,484	187,893	-36,495	213,529	7,567,096
13 1941 Federal Report Surplus Deficit	75,405	248,261	214,119	-249,529	-90,522	54,022	14,252	241,971	1,467,707	803,739	740,942	360,729	81,131	310,189	4,272,416
14 1942 Federal Report Surplus Deficit	77,123	486,682	647,410	1,075,630	775,688	760,902	214,072	635,026	1,693,998	1,628,850	1,330,389	435,103	260,582	552,940	10,574,397
15 1943 Federal Report Surplus Deficit	170,773	-63,332	139,431	1,315,424	1,075,152	1,279,931	1,253,696	1,235,816	2,176,534	2,633,637	1,784,474	581,451	317,709	150,917	14,051,611
16 1944 Federal Report Surplus Deficit	142,098	259,019	-67,907	-99,482	17,849	-111,098	-52,643	229,500	855,411	27,790	323,122	362,395	10,332	158,805	2,055,191
17 1945 Federal Report Surplus Deficit	132,486	256,062	9,150	-478,717	-226,635	-88,043	-14,415	-228,893	2,094,204	2,072,548	203,132	272,494	39,639	180,050	4,223,062
18 1946 Federal Report Surplus Deficit	127,464	289,469	325,055	797,233	699,065	1,102,279	956,174	1,171,088	2,161,314	1,893,287	1,365,184	490,225	406,108	396,880	12,180,826
19 1947 Federal Report Surplus Deficit	146,928	293,137	1,614,132	1,468,538	1,510,282	1,620,530	712,613	720,192	2,427,384	1,974,576	1,283,187	471,801	285,635	282,715	14,811,649
20 1948 Federal Report Surplus Deficit	1,418,897	869,709	1,053,295	1,576,213	1,182,632	1,138,232	529,512	962,218	2,558,536	2,475,880	1,485,821	655,561	619,359	559,764	17,085,630
21 1949 Federal Report Surplus Deficit	384,676	183,370	434,165	740,386	554,096	1,544,371	741,701	1,080,432	2,649,824	1,977,543	522,864	179,685	-96,004	168,223	11,065,330
22 1950 Federal Report Surplus Deficit	106,050	157,771	149,867	1,312,349	1,505,830	1,697,364	1,026,153	890,017	2,099,050	2,490,723	1,781,484	667,328	623,502	484,613	14,992,099
23 1951 Federal Report Surplus Deficit	710,420	1,010,013	1,515,225	1,799,101	1,963,191	2,373,839	1,106,440	986,391	2,236,319	1,973,365	1,401,465	547,392	301,486	310,675	18,235,322
24 1952 Federal Report Surplus Deficit	1,153,440	562,894	1,115,068	1,321,137	1,307,179	1,142,930	1,035,830	1,212,925	2,642,583	2,206,007	1,259,662	457,542	184,967	18,146	15,620,310
25 1953 Federal Report Surplus Deficit	167,861	138,152	-148,534	549,694	974,926	806,247	259,314	448,843	2,020,549	2,713,132	1,651,983	531,810	402,448	368,815	10,885,240
26 1954 Federal Report Surplus Deficit	345,718	312,836	816,580	1,247,719	1,411,256	1,542,896	610,861	705,210	2,253,517	2,171,857	1,715,961	671,309	713,686	1,353,609	15,873,016
27 1955 Federal Report Surplus Deficit	419,564	635,560	771,705	349,284	371,006	-18,487	139,452	406,065	1,927,189	2,578,079	1,662,623	610,423	458,157	245,073	10,555,693
28 1956 Federal Report Surplus Deficit	508,853	833,787	1,570,547	1,893,874	1,775,654	2,033,883	971,843	1,089,458	2,535,748	2,432,399	1,439,183	594,294	566,647	368,904	18,615,073
29 1957 Federal Report Surplus Deficit	470,310	171,530	889,633	898,543	575,816	1,041,495	892,745	647,316	2,794,727	2,585,052	1,063,914	380,962	227,078	310,768	12,949,890
30 1958 Federal Report Surplus Deficit	134,559	278,168	6,817	1,023,616	977,749	1,083,633	528,432	828,471	2,665,498	2,363,549	941,223	441,529	176,224	173,063	11,622,532
31 1959 Federal Report Surplus Deficit	276,935	564,486	1,432,214	1,749,220	1,559,348	1,682,132	826,956	694,378	1,879,937	2,355,420	1,518,830	614,838	598,424	1,480,670	17,233,788
32 1960 Federal Report Surplus Deficit	1,721,601	1,323,805	1,241,436	1,145,896	981,275	1,158,775	1,367,609	869,506	1,782,987	2,207,475	1,224,736	485,735	179,929	161,776	15,852,542
33 1961 Federal Report Surplus Deficit	313,929	255,880	515,223	931,528	1,265,361	1,875,477	697,584	609,556	2,142,855	2,283,033	945,406	440,279	248,969	197,471	12,722,550
34 1962 Federal Report Surplus Deficit	72,204	250,692	371,703	999,879	980,131	300,932	1,070,412	1,084,565	2,128,111	1,784,339	1,052,145	451,476	330,746	112,959	10,990,294
35 1963 Federal Report Surplus Deficit	594,586	635,765	1,264,582	1,057,538	1,041,687	810,084	228,940	493,436	2,052,578	1,797,200	1,198,307	433,241	207,587	442,323	12,257,854
36 1964 Federal Report Surplus Deficit	109,192	155,795	486,916	479,810	464,423	343,157	718,462	435,598	2,114,311	2,531,762	1,641,635	609,555	573,569	677,006	11,341,191
37 1965 Federal Report Surplus Deficit	705,252	500,792	1,673,310	2,067,277	2,113,275	2,176,696	544,338	1,166,725	2,292,757	1,957,524	1,326,289	580,246	579,675	162,710	17,846,867
38 1966 Federal Report Surplus Deficit	419,214	242,104	628,096	846,636	750,288	473,399	1,048,917	612,970	1,526,313	1,692,291	1,199,161	490,643	176,671	179,109	10,285,809
39 1967 Federal Report Surplus Deficit	120,205	120,777	798,004	1,436,712	1,412,727	1,589,669	455,324	90,716	1,873,000	2,346,159	1,475,676	534,296	486,657	392,647	13,132,570
40 1968 Federal Report Surplus Deficit	358,272	356,886	644,693	1,204,099	1,280,048	1,384,190	144,070	334,773	1,414,659	2,191,890	1,280,535	511,106	364,314	899,154	12,368,688

**Table 11.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
41 1969 Federal Report Surplus Deficit	753,227	872,893	1,080,237	1,813,838	1,641,215	1,653,188	1,043,179	1,059,113	2,514,887	2,145,173	1,282,675	401,349	223,235	266,950	16,751,162
42 1970 Federal Report Surplus Deficit	371,393	314,348	163,472	1,128,186	866,085	858,522	339,865	424,016	2,096,545	2,523,537	823,073	382,676	87,638	150,382	10,529,737
43 1971 Federal Report Surplus Deficit	109,054	180,009	374,909	1,860,543	2,043,275	2,210,425	980,155	984,473	2,508,343	2,534,955	1,666,303	641,045	638,577	493,746	17,225,811
44 1972 Federal Report Surplus Deficit	457,290	241,971	803,625	1,704,981	1,914,879	2,565,928	241,971	760,912	2,422,986	2,329,162	1,558,399	677,700	675,393	549,530	17,906,060
45 1973 Federal Report Surplus Deficit	422,011	261,293	628,950	1,005,066	326,477	216,289	-189,120	248,626	1,474,807	433,367	709,787	273,313	35,572	162,240	6,008,678
46 1974 Federal Report Surplus Deficit	139,838	82,840	1,038,566	2,011,279	1,860,885	2,529,604	1,125,477	1,069,485	2,292,056	2,378,492	1,799,039	657,741	672,839	529,052	18,187,191
47 1975 Federal Report Surplus Deficit	82,080	242,335	109,862	1,084,254	1,091,953	1,235,675	270,604	419,760	2,147,700	2,629,060	1,892,199	568,732	541,374	577,430	12,893,019
48 1976 Federal Report Surplus Deficit	777,199	1,014,150	1,835,569	1,789,947	1,552,113	2,074,558	1,127,736	962,797	2,557,629	2,221,768	1,481,044	691,894	769,648	1,650,427	20,506,480
49 1977 Federal Report Surplus Deficit	465,529	264,485	-50,113	-9,893	136,282	8,293	-125,468	117,288	653,954	10,166	377,454	342,790	34,008	-105,405	2,119,372
50 1978 Federal Report Surplus Deficit	-77,196	267,911	550,027	909,554	891,253	766,148	986,641	703,174	2,030,929	1,486,588	1,330,664	374,659	145,128	998,325	11,363,806
51 1979 Federal Report Surplus Deficit	499,201	283,688	34,156	641,841	95,836	964,565	178,598	527,091	2,350,156	1,454,467	151,080	282,600	40,463	303,477	7,807,220
52 1980 Federal Report Surplus Deficit	163,657	262,853	-185,357	391,922	123,878	174,080	519,322	741,759	2,496,296	2,239,384	1,027,276	244,345	101,810	318,783	8,620,008
53 1981 Federal Report Surplus Deficit	132,352	222,928	1,212,493	1,376,084	1,363,450	820,774	-75,859	485,400	2,015,520	2,520,813	1,344,262	623,485	569,549	391,243	13,002,492
54 1982 Federal Report Surplus Deficit	291,506	409,583	661,324	1,399,367	1,970,837	2,534,516	983,923	819,887	2,409,485	2,618,511	1,811,468	646,727	645,572	878,674	18,081,379
55 1983 Federal Report Surplus Deficit	742,818	414,593	948,420	1,505,241	1,539,711	2,042,472	757,410	661,161	2,347,611	1,555,076	640,094	521,750	2,255,003	554,717	16,526,276
56 1984 Federal Report Surplus Deficit	353,614	1,143,912	1,085,369	1,480,955	1,368,312	1,396,335	1,105,904	1,079,097	2,443,741	2,644,365	1,618,332	601,356	358,088	527,057	17,206,437
57 1985 Federal Report Surplus Deficit	383,187	359,408	601,625	746,159	534,135	450,296	677,503	836,495	2,122,926	1,322,799	717,830	128,307	-84,751	236,470	9,032,389
58 1986 Federal Report Surplus Deficit	125,500	871,283	692,758	1,290,964	1,455,728	2,381,306	1,205,768	1,140,995	1,963,648	2,039,155	980,234	339,537	109,712	74,834	14,671,424
59 1987 Federal Report Surplus Deficit	27,007	324,244	629,867	508,174	63,953	754,150	93,294	520,903	1,893,208	1,266,745	345,364	170,329	-85,141	117,445	6,629,542
60 1988 Federal Report Surplus Deficit	134,790	241,544	-171,353	-275,269	-449,800	79,600	66,098	439,829	1,417,075	705,164	769,434	337,127	62,724	169,130	3,526,090
61 1989 Federal Report Surplus Deficit	109,237	380,023	179,110	-26,069	-171,686	618,005	487,814	1,120,897	1,976,801	1,456,051	653,370	220,827	5,458	199,863	7,209,702
62 1990 Federal Report Surplus Deficit	207,258	327,126	807,522	983,841	1,080,363	1,374,332	543,975	979,833	1,659,038	1,993,779	1,171,917	540,166	483,930	166,130	12,319,209
63 1991 Federal Report Surplus Deficit	90,953	1,011,175	1,094,652	1,270,721	1,334,616	1,545,890	711,778	570,692	1,924,771	2,078,703	1,439,984	632,689	524,545	165,441	14,396,610
64 1992 Federal Report Surplus Deficit	236,457	248,547	-156,213	182,112	241,669	806,467	-100,006	240,413	1,355,964	508,341	360,704	243,974	-27,900	37,106	4,177,636
65 1993 Federal Report Surplus Deficit	181,345	338,742	74,495	-433,309	-495,226	395,478	275,333	493,798	2,257,319	1,792,307	812,388	343,128	112,054	297,133	6,444,985
66 1994 Federal Report Surplus Deficit	208,132	409,286	143,353	-537,751	-195,948	-51,775	49,380	439,932	1,759,374	1,311,961	778,836	288,613	-4,756	218,870	4,817,505
67 1995 Federal Report Surplus Deficit	175,843	88,026	41,451	592,568	815,080	1,311,527	341,084	434,469	1,936,790	2,324,165	1,262,032	328,701	162,070	482,163	10,295,967
68 1996 Federal Report Surplus Deficit	639,295	1,414,127	2,063,393	2,028,770	2,105,601	2,600,876	1,052,047	1,156,131	2,408,565	2,216,540	1,498,815	613,577	526,608	370,991	20,695,336
69 1997 Federal Report Surplus Deficit	320,874	329,284	1,162,782	2,116,641	1,994,374	2,533,853	1,061,104	1,108,238	2,420,510	2,345,591	1,591,375	635,705	663,993	864,391	19,148,715
70 1998 Federal Report Surplus Deficit	1,496,720	828,046	596,691	967,965	888,714	786,524	494,185	654,316	2,751,908	2,562,279	1,305,496	519,713	202,392	144,896	14,199,846
71 1999 Federal Report Surplus Deficit	164,594	32,688	1,015,361	1,713,395	1,718,241	2,230,627	692,175	947,767	2,208,497	2,498,606	1,578,347	706,005	682,040	593,789	16,782,132
72 2000 Federal Report Surplus Deficit	288,806	1,233,993	1,230,499	1,071,168	1,145,627	1,115,666	957,758	1,039,809	2,197,422	1,201,770	1,079,265	462,719	45,743	47,843	13,118,088
73 2001 Federal Report Surplus Deficit	178,501	209,688	-42,006	-123,587	3,285	50,151	-68,085	169,573	1,107,868	-253,795	470,517	369,327	4,676	-59,612	2,016,503
74 2002 Federal Report Surplus Deficit	-130,247	264,593	93,292	-145,051	-33,467	328,945	416,321	928,890	1,895,611	2,270,991	1,379,104	434,633	217,145	307,399	8,228,159
75 2003 Federal Report Surplus Deficit	244,862	371,464	55,351	-144,295	-210,478	934,852	463,999	665,413	1,899,482	2,157,312	724,794	211,624	-78,379	11,676	7,307,679
76 2004 Federal Report Surplus Deficit	144,182	445,251	300,547	365,900	-85,664	590,333	318,465	540,621	1,802,204	1,307,046	856,576	306,353	118,253	627,583	7,637,651
77 2005 Federal Report Surplus Deficit	485,612	250,710	775,360	820,752	763,762	209,720	-35,462	431,725	2,009,765	1,542,729	916,525	371,129	11,207	233,073	8,786,607
78 2006 Federal Report Surplus Deficit	-15,737	305,085	599,332	1,234,416	1,333,523	1,193,986	1,093,165	1,137,047	2,606,954	2,239,426	1,034,935	252,661	107,587	54,702	13,177,082
79 2007 Federal Report Surplus Deficit	234,802	365,867	359,471	1,065,901	874,223	1,426,754	853,397	570,919	1,998,273	1,666,688	1,111,362	318,687	36,757	-22,665	10,860,436
80 2008 Federal Report Surplus Deficit	245,843	415,323	-75,178	203,811	348,071	385,245	317,510	85,979	2,400,583	2,575,407	1,355,851	460,205	472,072	63,243	9,253,965
<b>Ranked Averages</b>															
<b>81 Bottom 10 pct</b>	<b>218,199</b>	<b>273,147</b>	<b>-45,914</b>	<b>-293,072</b>	<b>-166,844</b>	<b>-34,139</b>	<b>27,110</b>	<b>223,489</b>	<b>1,123,542</b>	<b>346,236</b>	<b>429,570</b>	<b>344,635</b>	<b>50,716</b>	<b>134,924</b>	<b>2,631,598</b>
<b>82 Middle 80 pct</b>	<b>317,398</b>	<b>388,168</b>	<b>543,906</b>	<b>844,218</b>	<b>802,742</b>	<b>1,026,471</b>	<b>571,343</b>	<b>704,284</b>	<b>2,101,767</b>	<b>1,974,887</b>	<b>1,139,391</b>	<b>429,216</b>	<b>251,176</b>	<b>332,465</b>	<b>11,427,432</b>
<b>83 Top 10 pct</b>	<b>480,659</b>	<b>666,969</b>	<b>1,331,379</b>	<b>1,842,995</b>	<b>1,892,192</b>	<b>2,405,882</b>	<b>1,083,984</b>	<b>994,162</b>	<b>2,410,412</b>	<b>2,314,479</b>	<b>1,572,598</b>	<b>633,129</b>	<b>602,773</b>	<b>690,330</b>	<b>18,921,944</b>

**Table 11.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1 1929 Federal Report Surplus Deficit	204,539	271,192	-6,672	-121,927	-132,843	120,781	-59,244	344,209	905,360	829,615	-122,797	305,356	74,295	358,097	2,969,962
2 1930 Federal Report Surplus Deficit	248,857	359,984	23,423	-572,383	3,177	65,364	165,107	550,836	675,040	-170,259	818,666	404,913	107,917	285,386	2,966,028
3 1931 Federal Report Surplus Deficit	197,432	358,209	91,468	-346,221	-511,054	-104,945	104,208	-54,410	1,101,202	28,379	729,610	386,444	149,407	183,690	2,313,419
4 1932 Federal Report Surplus Deficit	141,917	160,053	42,480	-785,021	-557,766	689,086	967,730	985,994	2,342,249	2,057,981	1,159,970	467,474	430,608	540,154	8,642,909
5 1933 Federal Report Surplus Deficit	183,180	21,152	722,625	1,027,532	1,138,414	1,276,983	458,284	549,887	1,595,389	2,473,204	1,554,004	625,996	594,357	445,807	12,666,814
6 1934 Federal Report Surplus Deficit	609,765	1,287,210	1,798,692	1,904,049	1,703,003	2,066,706	1,078,896	934,877	1,721,358	1,241,173	843,465	223,036	107,111	220,210	15,739,551
7 1935 Federal Report Surplus Deficit	151,670	-147,744	-9,572	886,713	1,048,160	1,233,694	126,208	575,363	1,386,976	1,248,878	1,243,686	577,618	206,540	81,251	8,609,441
8 1936 Federal Report Surplus Deficit	208,837	260,230	-155,676	-561,475	-134,425	162,814	161,020	1,020,175	2,406,651	1,808,753	929,228	350,461	85,657	254,621	6,796,871
9 1937 Federal Report Surplus Deficit	198,577	393,053	-14,037	-714,546	-309,688	30,367	20,955	142,364	1,220,765	655,446	84,956	349,594	54,997	254,568	2,367,371
10 1938 Federal Report Surplus Deficit	212,562	297,553	431,702	967,180	970,142	1,341,219	781,494	1,161,129	2,056,452	1,660,373	1,214,163	211,139	66,975	409,406	11,781,490
11 1939 Federal Report Surplus Deficit	171,807	231,676	-64,362	394,827	269,571	414,164	456,131	810,364	1,631,278	621,156	844,344	330,296	64,321	340,693	6,516,267
12 1940 Federal Report Surplus Deficit	209,391	420,039	83,073	499,458	206,069	1,629,554	488,070	715,763	1,522,063	536,742	728,389	207,948	-17,371	257,353	7,486,539
13 1941 Federal Report Surplus Deficit	79,848	294,144	248,723	-234,398	-68,679	156,106	-29,247	280,239	1,226,640	580,460	713,853	101,547	353,367	4,085,746	
14 1942 Federal Report Surplus Deficit	82,929	535,070	692,105	1,089,842	802,818	884,150	170,788	677,410	1,434,688	1,449,865	1,380,417	452,294	297,408	595,595	10,545,377
15 1943 Federal Report Surplus Deficit	177,139	-35,024	175,880	1,329,496	1,096,582	1,419,577	1,214,694	1,239,884	1,910,893	2,288,623	1,744,264	618,700	336,902	190,089	13,707,699
16 1944 Federal Report Surplus Deficit	147,863	298,188	-38,220	-84,948	39,006	-7,005	-99,068	268,375	594,761	-218,336	267,998	385,118	30,982	203,338	1,788,052
17 1945 Federal Report Surplus Deficit	138,508	294,540	44,421	-449,840	-203,705	22,165	-57,228	-192,827	1,828,312	1,862,391	149,613	291,675	60,168	222,374	4,010,566
18 1946 Federal Report Surplus Deficit	133,581	331,405	359,675	818,737	720,349	1,213,002	911,401	1,164,848	1,893,676	1,629,555	1,454,429	530,360	435,999	439,655	12,036,670
19 1947 Federal Report Surplus Deficit	152,403	337,808	1,583,271	1,501,662	1,586,576	1,733,033	655,330	751,910	2,149,635	1,800,914	505,683	307,638	320,313	14,604,460	
20 1948 Federal Report Surplus Deficit	1,447,465	916,230	1,062,079	1,599,834	1,234,507	1,264,296	506,972	975,278	2,246,947	2,214,220	1,593,013	703,048	664,733	606,154	17,034,775
21 1949 Federal Report Surplus Deficit	390,083	217,715	469,710	755,231	582,315	1,656,918	718,757	1,096,504	2,332,775	1,716,154	468,279	198,634	-74,528	211,915	10,740,462
22 1950 Federal Report Surplus Deficit	112,037	191,104	181,696	1,300,796	1,634,831	1,806,987	974,547	927,549	1,820,227	2,267,926	1,844,952	702,756	662,704	526,997	14,955,109
23 1951 Federal Report Surplus Deficit	722,832	1,051,550	1,477,480	1,798,111	2,088,990	2,301,365	1,063,188	994,985	2,047,943	1,714,039	1,532,105	571,296	324,721	348,078	18,036,683
24 1952 Federal Report Surplus Deficit	1,174,625	611,384	1,122,027	1,335,436	1,391,384	1,276,518	1,010,172	1,194,292	2,359,955	1,970,787	1,315,647	487,598	204,686	56,850	15,511,361
25 1953 Federal Report Surplus Deficit	174,275	169,843	-123,013	533,541	1,025,520	929,869	213,906	486,036	1,717,374	2,453,689	1,753,136	552,791	428,623	409,825	10,725,416
26 1954 Federal Report Surplus Deficit	351,865	354,343	851,158	1,253,763	1,504,848	1,681,581	579,681	737,999	2,091,416	1,882,145	1,800,395	726,701	775,045	1,407,859	15,998,799
27 1955 Federal Report Surplus Deficit	425,086	684,290	801,013	365,403	397,145	87,606	96,992	444,204	1,629,743	2,332,221	1,756,382	657,687	479,342	285,849	10,442,963
28 1956 Federal Report Surplus Deficit	518,567	879,961	1,510,248	1,913,232	1,892,535	2,114,820	916,752	1,110,338	2,256,070	2,189,306	1,569,213	610,808	599,544	410,444	18,491,840
29 1957 Federal Report Surplus Deficit	475,539	206,158	921,124	909,279	603,167	1,138,602	858,439	689,307	2,556,330	2,304,038	1,147,024	403,001	246,419	352,779	12,811,206
30 1958 Federal Report Surplus Deficit	140,799	318,514	35,339	1,040,771	1,003,440	1,218,663	489,778	870,749	2,369,246	2,020,458	1,021,310	469,722	196,807	215,891	11,411,487
31 1959 Federal Report Surplus Deficit	283,190	612,458	1,386,131	1,765,760	1,653,743	1,802,100	785,513	720,020	1,733,917	2,114,650	1,602,459	663,878	652,879	1,533,294	17,309,992
32 1960 Federal Report Surplus Deficit	1,749,821	1,325,155	1,194,630	1,160,786	1,058,900	1,300,929	1,288,280	876,116	1,521,274	1,976,540	1,251,361	517,117	199,047	204,049	15,624,006
33 1961 Federal Report Surplus Deficit	319,242	296,996	551,842	943,233	1,331,974	1,917,462	664,331	636,354	1,864,046	1,979,207	1,022,159	478,506	277,729	239,705	12,522,786
34 1962 Federal Report Surplus Deficit	79,582	286,859	408,469	1,014,603	1,011,445	401,133	1,015,269	1,061,785	1,867,137	1,566,598	1,136,436	475,664	351,121	151,486	10,827,587
35 1963 Federal Report Surplus Deficit	604,600	683,751	1,222,800	1,072,560	1,069,451	932,678	187,180	530,406	1,751,198	1,589,281	1,259,326	469,588	216,226	483,653	12,072,698
36 1964 Federal Report Surplus Deficit	115,896	188,385	523,520	495,644	490,479	445,446	679,121	473,497	1,807,802	2,314,279	1,708,379	650,588	618,843	724,418	11,236,297
37 1965 Federal Report Surplus Deficit	716,514	547,777	1,645,517	2,111,352	2,235,863	2,262,623	510,060	1,144,816	1,997,095	1,830,923	1,386,188	621,200	612,135	199,563	17,821,625
38 1966 Federal Report Surplus Deficit	424,001	282,906	663,294	871,450	779,909	581,552	1,010,830	650,210	1,263,962	1,398,140	1,230,593	531,953	203,778	218,534	10,111,110
39 1967 Federal Report Surplus Deficit	125,879	153,873	833,368	1,431,346	1,554,351	1,684,133	404,464	127,766	1,614,014	2,139,971	1,588,436	554,709	515,456	432,689	13,160,455
40 1968 Federal Report Surplus Deficit	365,112	404,861	683,536	1,224,958	1,316,555	1,479,140	100,869	374,363	1,142,087	1,980,643	1,387,686	549,180	388,771	952,392	12,350,154



**Table 11.1.2**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
41 1969 Federal Report Surplus Deficit	765,061	920,735	1,078,950	1,818,502	1,780,332	1,809,549	1,014,779	1,035,691	2,316,965	1,908,935	1,298,936	429,952	248,009	306,933	16,733,327
42 1970 Federal Report Surplus Deficit	376,648	354,216	196,172	1,116,211	929,832	1,013,590	278,023	462,608	1,770,741	2,326,749	766,821	401,728	107,392	188,404	10,289,135
43 1971 Federal Report Surplus Deficit	114,470	216,938	407,669	1,864,238	2,158,837	2,254,281	967,667	995,974	2,227,028	2,279,578	1,762,658	678,247	686,673	538,061	17,152,319
44 1972 Federal Report Surplus Deficit	465,335	280,036	840,130	1,712,837	2,008,679	2,594,436	1,163,541	797,299	2,142,329	2,129,740	1,661,356	717,583	715,639	591,568	17,820,509
45 1973 Federal Report Surplus Deficit	428,316	300,687	663,416	1,023,790	352,879	323,364	-233,367	287,595	1,222,426	193,792	690,199	295,365	41,996	205,255	5,795,712
46 1974 Federal Report Surplus Deficit	145,401	129,024	1,060,960	2,106,348	2,014,406	2,534,701	1,087,334	1,045,414	2,011,759	2,186,881	1,870,101	704,862	713,799	569,649	18,180,639
47 1975 Federal Report Surplus Deficit	89,213	280,063	142,288	1,095,955	1,153,610	1,381,637	216,454	455,141	1,952,200	2,474,437	1,912,948	584,089	560,672	622,835	12,921,542
48 1976 Federal Report Surplus Deficit	787,505	1,046,254	1,802,708	1,801,133	1,651,231	2,156,853	1,077,161	992,815	2,332,356	2,017,173	1,582,762	731,636	818,114	1,795,192	20,592,892
49 1977 Federal Report Surplus Deficit	470,752	304,166	-20,496	4,619	160,035	111,413	-168,266	154,965	399,085	-233,505	334,816	371,681	55,671	-68,309	1,876,629
50 1978 Federal Report Surplus Deficit	-70,528	310,429	589,582	952,137	903,620	870,244	951,134	740,343	1,855,440	1,271,784	1,414,308	394,011	163,464	1,046,852	11,392,821
51 1979 Federal Report Surplus Deficit	505,030	322,306	62,424	662,520	124,207	1,078,855	141,944	560,604	2,059,910	1,230,437	95,981	303,376	60,490	345,960	7,554,044
52 1980 Federal Report Surplus Deficit	170,990	302,552	-158,885	411,761	148,180	273,881	479,409	762,985	2,337,826	2,047,254	1,106,277	264,130	122,040	357,244	8,625,644
53 1981 Federal Report Surplus Deficit	138,278	261,278	1,167,269	1,389,918	1,441,424	950,607	-103,922	516,073	1,738,542	2,218,253	1,472,706	674,300	619,506	430,339	12,914,572
54 1982 Federal Report Surplus Deficit	297,120	455,366	700,174	1,405,709	2,121,666	2,589,811	944,838	861,310	2,241,300	2,397,623	1,875,938	690,036	684,144	934,757	18,199,791
55 1983 Federal Report Surplus Deficit	753,143	461,548	977,328	1,509,809	1,626,270	2,161,087	730,493	700,814	2,051,996	2,108,544	1,705,096	663,933	555,123	598,337	16,603,520
56 1984 Federal Report Surplus Deficit	359,253	1,160,648	1,104,315	1,488,887	1,467,239	1,470,609	1,070,235	1,103,167	2,158,454	2,434,011	1,631,081	643,457	376,976	575,512	17,043,842
57 1985 Federal Report Surplus Deficit	388,238	408,400	639,092	714,228	624,418	557,715	637,603	881,161	1,825,312	1,102,986	733,161	151,736	-64,867	276,451	8,875,636
58 1986 Federal Report Surplus Deficit	130,842	921,222	729,337	1,298,328	1,485,083	2,500,709	1,149,899	1,176,174	1,685,471	1,809,097	1,063,639	360,954	112,442	113,401	14,536,599
59 1987 Federal Report Surplus Deficit	30,724	368,824	669,115	526,472	92,212	865,104	74,895	546,558	1,686,392	986,473	293,647	192,128	-63,573	155,921	6,424,892
60 1988 Federal Report Surplus Deficit	141,027	284,672	-145,059	-261,767	-425,508	181,935	25,410	485,071	1,162,169	474,220	844,562	357,577	84,074	210,084	3,418,466
61 1989 Federal Report Surplus Deficit	115,631	424,869	209,451	-10,898	-147,911	735,884	437,390	1,131,482	1,700,642	1,234,341	606,402	240,388	24,703	240,661	6,943,036
62 1990 Federal Report Surplus Deficit	213,946	369,879	841,247	1,001,173	1,180,316	1,506,540	496,335	998,898	1,376,377	1,706,770	1,246,652	587,883	517,477	207,211	12,250,703
63 1991 Federal Report Surplus Deficit	95,449	1,052,084	1,055,007	1,277,280	1,444,958	1,583,049	662,324	597,451	1,704,790	1,819,954	1,516,196	668,693	559,788	206,760	14,243,783
64 1992 Federal Report Surplus Deficit	242,438	283,170	-129,031	202,499	267,585	934,164	-144,113	277,863	1,103,239	278,172	302,957	265,022	-5,139	77,580	3,956,407
65 1993 Federal Report Surplus Deficit	187,565	381,728	106,328	-417,782	-472,436	493,249	237,976	533,850	1,964,659	1,572,171	755,412	373,363	142,840	335,519	6,194,442
66 1994 Federal Report Surplus Deficit	214,280	450,958	178,943	-512,365	-176,174	52,322	14,516	472,502	1,506,277	1,028,578	747,220	317,569	23,209	259,862	4,577,696
67 1995 Federal Report Surplus Deficit	182,451	116,135	70,017	606,036	837,762	1,426,501	301,800	472,756	1,660,261	2,105,789	1,315,220	352,817	187,650	526,154	10,161,349
68 1996 Federal Report Surplus Deficit	646,641	1,412,892	2,063,772	2,075,218	2,231,609	2,471,993	999,175	1,123,370	2,255,140	2,077,461	1,581,180	647,974	558,480	411,022	20,555,927
69 1997 Federal Report Surplus Deficit	328,327	371,701	1,173,812	2,201,256	2,123,068	2,598,498	1,013,982	1,113,785	2,147,347	2,156,203	1,665,129	674,889	702,505	917,355	19,187,854
70 1998 Federal Report Surplus Deficit	1,529,292	879,169	636,490	987,428	916,630	904,133	455,202	691,402	2,451,385	2,329,620	1,390,941	557,223	223,786	183,355	14,136,056
71 1999 Federal Report Surplus Deficit	170,508	63,538	1,033,956	1,714,946	1,792,328	2,298,470	678,035	981,643	1,929,665	2,252,200	1,674,585	743,867	718,522	644,804	16,697,066
72 2000 Federal Report Surplus Deficit	296,675	1,233,652	1,183,562	1,082,302	1,207,867	1,229,736	912,477	1,039,890	1,956,587	987,649	1,114,833	494,139	49,637	87,177	12,876,183
73 2001 Federal Report Surplus Deficit	185,968	247,638	-11,373	-109,986	26,584	152,354	-117,137	207,728	846,366	-510,439	422,303	392,233	24,518	-20,045	1,736,712
74 2002 Federal Report Surplus Deficit	-123,823	307,256	125,625	-130,072	-12,400	432,909	389,359	939,086	1,625,701	2,003,713	1,486,256	458,226	238,571	348,505	8,088,914
75 2003 Federal Report Surplus Deficit	251,504	415,015	88,737	-127,484	-186,089	1,047,323	431,050	699,748	1,625,240	1,941,032	688,949	232,083	-56,157	51,275	7,102,226
76 2004 Federal Report Surplus Deficit	149,839	492,072	336,934	385,466	-61,309	705,671	285,555	581,541	1,519,947	1,091,882	866,776	325,754	137,761	672,817	7,490,705
77 2005 Federal Report Surplus Deficit	492,599	290,431	802,645	841,933	817,869	322,013	-83,461	472,720	1,734,790	1,257,385	997,170	409,484	49,453	271,485	8,676,517
78 2006 Federal Report Surplus Deficit	-8,939	343,120	637,020	1,242,140	1,431,762	1,331,230	1,053,384	1,140,067	2,289,170	1,947,198	1,114,376	274,196	130,098	93,623	13,018,446
79 2007 Federal Report Surplus Deficit	241,669	416,366	394,529	1,073,122	957,620	1,543,419	817,714	611,869	1,717,989	1,391,778	1,152,574	340,255	56,785	16,090	10,731,779
80 2008 Federal Report Surplus Deficit	251,578	462,825	-47,227	220,540	373,517	489,513	276,591	122,774	2,096,309	2,403,189	1,431,383	489,881	494,433	100,318	9,165,625
<b>81 Bottom 10 pct</b>	<b>224,377</b>	<b>314,638</b>	<b>-15,121</b>	<b>-275,895</b>	<b>-143,787</b>	<b>68,783</b>	<b>-16,004</b>	<b>262,392</b>	<b>863,094</b>	<b>106,890</b>	<b>422,514</b>	<b>369,114</b>	<b>72,733</b>	<b>175,851</b>	<b>2,429,580</b>
<b>82 Middle 80 pct</b>	<b>321,255</b>	<b>422,579</b>	<b>552,722</b>	<b>851,328</b>	<b>854,528</b>	<b>1,140,463</b>	<b>542,650</b>	<b>723,987</b>	<b>1,840,465</b>	<b>1,738,623</b>	<b>1,190,069</b>	<b>460,231</b>	<b>278,452</b>	<b>380,648</b>	<b>11,298,002</b>
<b>83 Top 10 pct</b>	<b>520,363</b>	<b>736,816</b>	<b>1,429,334</b>	<b>1,926,545</b>	<b>2,044,921</b>	<b>2,378,833</b>	<b>951,561</b>	<b>1,048,354</b>	<b>2,161,126</b>	<b>2,071,201</b>	<b>1,632,827</b>	<b>656,588</b>	<b>626,680</b>	<b>698,258</b>	<b>18,883,406</b>

**Table 11.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>LLH-MWh - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Aug</b>
1 1929 Federal Report Surplus Deficit	-213,045	-180,598	-446,947	-433,493	-411,772	-204,658	-200,811	49,284	291,771	419,473	-394,458	-104,558	-82,434	-197,634	-2,109,881
2 1930 Federal Report Surplus Deficit	-201,991	-156,851	-452,776	-605,152	-328,131	-244,702	-70,915	137,579	137,507	-135,458	-81,073	-70,532	-74,443	-248,628	-2,395,567
3 1931 Federal Report Surplus Deficit	-208,077	-138,773	-410,683	-510,039	-546,905	-321,403	-103,159	-155,844	375,408	-95,741	-123,664	-84,620	-101,501	-284,193	-2,709,192
4 1932 Federal Report Surplus Deficit	-231,833	-228,119	-422,240	-689,697	-543,937	205,477	379,622	729,548	1,698,561	1,487,833	362,421	-38,942	-39,310	-146,129	2,523,256
5 1933 Federal Report Surplus Deficit	-218,268	-243,445	-124,884	493,869	405,156	427,954	34,222	171,248	975,751	2,090,449	1,394,697	357,276	149,689	-198,371	5,715,341
6 1934 Federal Report Surplus Deficit	-101,096	419,892	1,386,277	1,663,982	1,221,403	1,511,051	591,335	756,814	1,282,722	1,127,415	172,479	-136,733	-165,669	-296,766	9,433,107
7 1935 Federal Report Surplus Deficit	-234,510	-342,992	-440,886	401,320	150,904	354,165	-96,963	401,320	227,957	685,605	771,892	252,390	-98,354	-305,826	2,107,988
8 1936 Federal Report Surplus Deficit	-212,326	-205,976	-532,636	-620,539	-415,890	-165,568	-56,399	398,932	1,580,149	1,363,440	60,557	-96,099	-83,658	-245,796	768,190
9 1937 Federal Report Surplus Deficit	-207,170	-127,838	-454,919	-686,165	-471,754	-268,472	-164,107	-110,155	476,489	239,032	-384,364	-88,601	-88,566	-260,137	-2,596,727
10 1938 Federal Report Surplus Deficit	-213,620	-143,809	-249,265	-32,622	187,679	467,694	314,861	803,980	1,598,357	983,330	495,107	-134,183	-154,968	-196,837	3,725,702
11 1939 Federal Report Surplus Deficit	-212,509	-214,914	-470,852	-261,923	-251,287	-58,630	43,251	370,414	804,575	129,490	-96,119	-103,472	-93,827	-219,091	-634,895
12 1940 Federal Report Surplus Deficit	-196,729	-93,039	-377,345	-219,113	-253,338	630,169	85,938	211,427	699,103	118,610	-123,100	-143,069	-125,789	-246,111	-32,387
13 1941 Federal Report Surplus Deficit	-242,592	-154,315	-314,223	-476,885	-362,458	-188,112	-193,715	-41,271	537,949	142,849	-224,029	-78,835	-68,646	-195,121	-1,859,406
14 1942 Federal Report Surplus Deficit	-230,603	-24,416	-86,938	86,105	-98,419	157,381	-56,127	151,627	669,350	788,201	721,743	-2,143	-2,392	-62,260	2,011,109
15 1943 Federal Report Surplus Deficit	-218,868	-246,797	-321,416	348,809	201,267	556,848	653,443	817,409	1,134,786	2,004,256	1,301,463	125,350	-66,842	-256,219	6,033,490
16 1944 Federal Report Surplus Deficit	-222,807	-157,081	-432,466	-402,780	-352,704	-280,710	-200,783	17,646	75,976	-123,347	-345,440	-76,703	-97,157	-261,496	-2,859,854
17 1945 Federal Report Surplus Deficit	-220,326	-180,464	-395,169	-556,431	-413,048	-262,603	-201,916	-184,993	936,998	1,063,691	-306,781	-111,014	-81,924	-241,030	-1,155,009
18 1946 Federal Report Surplus Deficit	-217,062	-124,982	-243,687	-44,842	-14,055	418,156	414,131	815,435	1,737,468	1,030,478	1,014,711	40,184	-59,263	-161,772	4,604,901
19 1947 Federal Report Surplus Deficit	-211,641	-73,764	532,024	984,992	478,015	706,712	240,354	328,549	1,495,537	1,143,034	788,455	733	-92,017	-210,965	6,110,017
20 1948 Federal Report Surplus Deficit	247,398	200,187	63,170	746,435	134,396	387,173	127,342	535,107	2,086,837	2,129,684	1,201,360	419,041	208,071	-89,839	8,396,362
21 1949 Federal Report Surplus Deficit	-166,404	-188,682	-233,961	13,791	-106,895	669,641	216,419	619,926	1,719,304	1,081,849	-295,211	-138,500	-140,720	-267,851	2,782,708
22 1950 Federal Report Surplus Deficit	-237,929	-202,044	-333,713	890,215	762,024	719,590	462,467	462,535	1,228,710	2,076,136	1,683,271	410,332	172,514	-131,012	7,963,095
23 1951 Federal Report Surplus Deficit	11,013	301,448	722,163	1,585,300	1,202,084	1,598,751	511,628	614,581	1,687,239	1,087,438	1,211,371	177,783	-96,778	-191,651	10,422,369
24 1952 Federal Report Surplus Deficit	155,885	21,588	75,875	762,839	302,713	459,205	498,016	927,943	2,086,975	1,169,441	653,251	-15,634	-114,322	-312,639	6,671,137
25 1953 Federal Report Surplus Deficit	-205,593	-232,354	-503,257	-152,363	155,672	168,186	-44,704	145,591	988,180	2,063,563	1,441,007	188,949	-34,953	-172,700	3,805,224
26 1954 Federal Report Surplus Deficit	-172,297	-96,605	-77,763	764,055	448,696	745,258	158,699	343,015	1,529,585	1,871,613	1,670,497	516,756	461,467	258,894	8,421,869
27 1955 Federal Report Surplus Deficit	-152,057	16,112	-83,975	-274,899	-233,746	-248,078	-119,646	98,535	768,551	2,075,946	1,590,269	359,143	2,001	-221,767	3,576,387
28 1956 Federal Report Surplus Deficit	-118,957	180,714	587,112	1,308,352	1,128,874	1,192,452	401,421	954,781	2,065,864	2,026,656	1,274,244	342,097	85,648	-161,798	11,267,460
29 1957 Federal Report Surplus Deficit	-125,340	-194,571	-40,201	57,155	-117,785	408,636	367,661	302,113	2,125,501	2,180,835	368,625	-75,810	-103,420	-207,255	4,946,145
30 1958 Federal Report Surplus Deficit	-205,329	-151,544	-376,841	228,620	56,226	344,770	48,789	409,173	1,697,586	1,790,455	155,114	-37,429	-125,729	-264,627	3,569,233
31 1959 Federal Report Surplus Deficit	-186,579	63,137	356,662	1,059,169	872,306	1,000,113	305,301	281,468	1,318,685	1,783,126	1,419,323	359,681	211,521	385,360	9,229,273
32 1960 Federal Report Surplus Deficit	481,040	437,378	415,684	383,569	84,222	317,013	712,931	585,557	741,061	1,340,160	772,448	48,239	-113,215	-279,508	5,926,579
33 1961 Federal Report Surplus Deficit	-184,997	-125,793	-200,098	382,060	311,685	828,881	152,368	243,451	1,564,646	1,953,984	390,183	12,897	-110,187	-252,161	4,966,921
34 1962 Federal Report Surplus Deficit	-250,871	-151,062	-264,525	37,228	28,529	-61,229	435,061	892,017	1,192,605	880,182	336,188	-30,136	-80,407	-277,778	2,685,803
35 1963 Federal Report Surplus Deficit	-60,429	67,902	276,186	656,157	107,802	185,480	-74,485	131,641	866,195	886,780	632,318	-31,015	-79,088	-140,132	3,425,313
36 1964 Federal Report Surplus Deficit	-219,809	-171,124	-208,185	-255,293	-201,795	-33,040	253,799	137,267	1,060,770	2,107,671	1,512,228	349,375	130,766	-15,823	4,446,806
37 1965 Federal Report Surplus Deficit	-52,441	-41,532	683,921	1,627,357	1,728,941	1,260,814	99,297	866,989	1,818,875	1,305,441	621,464	237,681	98,096	-238,910	10,015,993
38 1966 Federal Report Surplus Deficit	-126,036	-167,216	-133,891	-97,241	-87,135	-18,831	460,578	259,189	479,395	789,223	714,532	168,856	-99,184	-252,611	1,889,627
39 1967 Federal Report Surplus Deficit	-222,893	-204,477	-94,644	985,579	619,186	843,832	55,599	-103,577	979,708	2,022,495	1,322,365	217,905	-3,014	-182,343	6,235,722
40 1968 Federal Report Surplus Deficit	-142,600	-93,677	-134,768	627,973	220,114	442,473	-114,199	57,369	400,576	1,458,635	891,476	192,664	46,701	120,840	3,973,576

**Table 11.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2018**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>LLH-MWh - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
41 1969 Federal Report Surplus Deficit	-6,458	199,341	117,709	1,035,085	1,224,317	853,058	413,201	918,102	1,955,309	1,441,362	771,681	-68,657	-123,829	-234,028	8,496,193
42 1970 Federal Report Surplus Deficit	-157,445	-141,029	-356,375	76,003	-12,276	197,967	-36,152	106,113	995,672	1,691,184	-125,980	-69,703	-55,469	-229,236	1,883,273
43 1971 Federal Report Surplus Deficit	-198,420	-145,130	-231,381	1,275,980	1,596,352	1,121,641	421,442	614,269	2,017,439	2,074,991	1,466,629	370,637	345,095	-125,887	10,603,657
44 1972 Federal Report Surplus Deficit	-93,767	-114,082	-64,820	1,311,364	1,241,970	1,792,699	701,250	445,818	1,957,820	2,009,150	1,501,085	437,848	387,397	-86,398	11,427,334
45 1973 Federal Report Surplus Deficit	-103,973	-132,150	-164,669	-16,847	-204,269	-126,114	-259,660	6,916	498,772	58,825	-213,577	-112,449	-134,617	-249,076	-1,152,888
46 1974 Federal Report Surplus Deficit	-208,519	-154,540	52,200	2,011,103	1,483,089	1,565,460	506,814	867,385	1,841,097	2,034,214	1,731,047	384,449	380,031	-121,832	12,371,999
47 1975 Federal Report Surplus Deficit	-234,568	-169,252	-349,107	192,229	161,009	419,039	-43,946	116,446	1,474,225	1,941,381	1,631,090	172,195	43,486	-64,235	5,289,993
48 1976 Federal Report Surplus Deficit	63,068	241,495	1,045,099	1,054,106	830,827	1,195,622	530,769	540,136	1,981,781	1,432,567	1,349,400	594,726	607,917	574,308	12,041,820
49 1977 Federal Report Surplus Deficit	-99,858	-147,642	-432,680	-368,584	-297,117	-245,511	-238,976	-40,385	-10,565	-205,524	-364,814	-67,831	-97,821	-344,719	-2,962,028
50 1978 Federal Report Surplus Deficit	-285,307	-138,731	-118,036	48,608	79,910	223,956	440,121	322,853	1,431,047	797,678	663,273	-69,966	-104,215	118,188	3,409,378
51 1979 Federal Report Surplus Deficit	-116,689	-155,890	-424,415	-158,739	-308,870	210,899	-89,064	176,658	1,144,916	468,526	-376,953	-109,126	-84,368	-214,214	-37,329
52 1980 Federal Report Surplus Deficit	-217,100	-163,684	-518,955	-238,199	-257,428	-136,013	70,082	357,085	1,804,044	1,460,346	184,106	-120,255	-138,584	-193,081	1,892,365
53 1981 Federal Report Surplus Deficit	-221,283	-160,995	334,400	1,104,473	757,175	197,307	-223,541	133,259	945,213	2,045,399	1,193,954	411,001	187,192	-185,128	6,518,422
54 1982 Federal Report Surplus Deficit	-190,652	-93,875	-139,054	495,974	1,581,269	1,444,558	398,180	408,476	1,798,499	1,905,265	1,726,383	362,736	304,235	84,672	10,086,667
55 1983 Federal Report Surplus Deficit	23,657	-67,420	-44,198	826,865	816,938	1,187,863	273,309	290,164	1,303,287	1,375,527	1,360,275	392,557	13,022	-91,350	7,660,494
56 1984 Federal Report Surplus Deficit	-126,030	326,318	36,686	354,022	506,371	704,852	478,715	669,696	1,321,135	1,724,617	1,136,490	240,702	-52,710	-77,154	7,243,710
57 1985 Federal Report Surplus Deficit	-108,275	-18,892	-161,191	-90,002	-139,023	8,605	220,537	419,800	1,026,815	479,791	-208,612	-145,263	-190,017	-200,731	893,542
58 1986 Federal Report Surplus Deficit	-203,144	185,155	-112,824	389,324	592,136	1,470,998	406,783	627,345	836,861	1,069,046	249,874	-87,736	-111,238	-263,708	5,048,873
59 1987 Federal Report Surplus Deficit	-240,862	-73,002	-128,086	-217,877	-320,173	96,017	-150,540	7,711	1,033,097	418,141	-345,570	-128,864	-131,376	-274,672	-456,055
60 1988 Federal Report Surplus Deficit	-221,010	-178,933	-522,721	-490,776	-502,235	-180,399	-158,741	27,039	375,440	65,973	-44,150	-97,157	-90,053	-264,361	-2,282,085
61 1989 Federal Report Surplus Deficit	-241,520	-89,773	-325,509	-373,279	-389,167	188,417	147,174	704,904	949,898	532,085	-275,588	-113,814	-94,295	-235,267	384,265
62 1990 Federal Report Surplus Deficit	-200,511	-116,065	-39,820	418,726	463,870	548,177	15,704	667,921	705,882	1,627,333	565,999	199,617	62,448	-249,401	4,669,879
63 1991 Federal Report Surplus Deficit	-246,932	242,457	241,380	898,208	403,754	752,009	246,121	243,909	1,069,472	1,334,729	1,359,485	393,003	62,973	-265,114	6,735,455
64 1992 Federal Report Surplus Deficit	-201,088	-138,505	-493,973	-290,202	-259,703	203,369	-230,863	-12,927	395,869	-53,075	-337,299	-115,689	-107,108	-299,578	-1,940,772
65 1993 Federal Report Surplus Deficit	-229,119	-148,701	-428,611	-543,507	-530,345	-45,141	-12,413	144,565	1,097,906	735,745	-106,592	-68,809	-37,472	-172,761	-345,254
66 1994 Federal Report Surplus Deficit	-207,087	-99,871	-355,852	-612,956	-427,912	-250,898	-174,801	9,275	670,975	437,717	-224,917	-101,562	-101,282	-237,970	-1,677,141
67 1995 Federal Report Surplus Deficit	-223,216	-264,578	-402,466	-135,371	69,034	419,562	-14,229	124,580	785,673	1,444,007	228,109	-77,190	-109,311	-129,292	1,715,312
68 1996 Federal Report Surplus Deficit	-52,658	549,769	1,724,630	1,756,334	1,481,169	1,854,093	431,042	933,772	1,788,112	1,455,596	1,369,806	347,919	58,998	-171,086	13,527,496
69 1997 Federal Report Surplus Deficit	-178,475	-65,884	80,193	1,891,924	1,735,168	1,699,208	522,491	967,518	1,997,908	2,049,386	1,488,426	282,145	343,942	76,060	12,890,011
70 1998 Federal Report Surplus Deficit	317,373	136,369	-154,116	-46,171	-28,872	148,080	-21,318	260,865	1,761,725	1,773,788	600,406	64,873	-80,627	-223,740	4,508,635
71 1999 Federal Report Surplus Deficit	-192,274	-205,722	-832	1,171,343	1,058,694	1,245,677	233,368	507,171	1,177,038	1,851,996	1,508,498	495,606	350,268	-108,235	9,092,597
72 2000 Federal Report Surplus Deficit	-166,384	375,871	357,443	272,789	126,305	356,224	418,118	808,522	1,284,072	433,010	558,594	32,094	-143,040	-301,409	4,412,209
73 2001 Federal Report Surplus Deficit	-197,550	-186,717	-431,715	-411,662	-351,574	-195,242	-215,914	-13,464	224,228	-283,277	-337,667	-73,039	-105,396	-338,655	-2,917,642
74 2002 Federal Report Surplus Deficit	-280,922	-182,513	-365,058	-421,031	-308,398	-26,074	83,882	491,339	822,198	1,851,744	1,079,661	-39,374	-99,297	-212,910	2,393,248
75 2003 Federal Report Surplus Deficit	-194,385	-125,725	-412,836	-415,826	-383,120	229,941	35,162	110,875	737,155	1,253,412	-245,397	-127,374	-130,772	-313,437	17,674
76 2004 Federal Report Surplus Deficit	-232,623	-67,900	-259,676	-261,022	-346,859	56,901	-52,605	62,150	676,203	441,225	-118,241	-86,550	-40,640	-18,875	-248,512
77 2005 Federal Report Surplus Deficit	-123,565	-182,689	-95,314	-43,113	-51,610	-143,505	-200,819	-2,653	847,605	584,265	134,792	-76,520	-96,507	-213,605	336,760
78 2006 Federal Report Surplus Deficit	-274,608	-144,298	-127,815	388,178	560,143	459,845	493,516	712,271	1,678,774	1,786,582	417,868	-110,216	-143,184	-293,636	5,403,420
79 2007 Federal Report Surplus Deficit	-193,450	-39,243	-254,588	212,839	64,481	517,883	245,740	211,476	897,170	878,645	587,764	-97,860	-141,561	-324,421	2,564,875
80 2008 Federal Report Surplus Deficit	-198,341	-73,986	-426,569	-308,173	-231,273	-19,131	2,663	-82,950	1,348,855	2,166,520	718,417	7,317	-6,281	-277,383	2,619,686
<b>Ranked Averages</b>															
81 <b>Bottom 10 pct</b>	<b>-196,438</b>	<b>-159,304</b>	<b>-448,114</b>	<b>-488,581</b>	<b>-407,774</b>	<b>-242,637</b>	<b>-169,176</b>	<b>-11,038</b>	<b>243,282</b>	<b>-14,859</b>	<b>-259,454</b>	<b>-82,880</b>	<b>-92,171</b>	<b>-274,978</b>	<b>-2,604,122</b>
82 <b>Middle 80 pct</b>	<b>-157,282</b>	<b>-75,008</b>	<b>-131,998</b>	<b>206,747</b>	<b>150,676</b>	<b>383,983</b>	<b>144,777</b>	<b>348,036</b>	<b>1,172,870</b>	<b>1,266,918</b>	<b>586,128</b>	<b>61,393</b>	<b>-32,660</b>	<b>-179,296</b>	<b>3,745,284</b>
83 <b>Top 10 pct</b>	<b>-97,089</b>	<b>99,224</b>	<b>489,400</b>	<b>1,524,308</b>	<b>1,337,442</b>	<b>1,502,491</b>	<b>503,357</b>	<b>742,283</b>	<b>1,917,157</b>	<b>1,771,250</b>	<b>1,424,001</b>	<b>367,201</b>	<b>264,031</b>	<b>-26,035</b>	<b>11,819,018</b>

**Table 11.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
<b>LLH-MWh - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>	
1 1929 Federal Report Surplus Deficit	-142,673	-157,875	-421,933	-397,151	-381,248	-207,591	-109,806	75,830	258,422	136,423	-285,967	-60,646	-33,930	-121,514	-1,849,658	
2 1930 Federal Report Surplus Deficit	-133,000	-142,506	-425,371	-580,848	-302,467	-247,693	19,035	165,094	102,557	-388,617	-92,194	-35,200	-31,982	-169,889	-2,263,081	
3 1931 Federal Report Surplus Deficit	-137,423	-120,971	-390,440	-472,175	-522,976	-325,147	-12,892	-128,929	324,575	-357,205	-120,460	-50,122	-58,645	-204,361	-2,577,171	
4 1932 Federal Report Surplus Deficit	-162,231	-203,455	-403,797	-653,907	-514,568	192,260	459,261	757,535	1,707,516	1,236,177	327,703	-8,618	-515	-71,674	2,661,689	
5 1933 Federal Report Surplus Deficit	-148,635	-213,998	-107,658	450,318	375,548	389,114	170,339	194,664	972,563	1,942,589	1,598,000	380,867	172,468	-122,657	6,053,522	
6 1934 Federal Report Surplus Deficit	-34,314	482,021	1,514,661	1,717,599	1,273,861	1,543,567	690,270	755,980	1,230,609	904,547	142,377	-98,572	-124,881	-219,992	9,777,733	
7 1935 Federal Report Surplus Deficit	-164,498	-310,335	-417,937	358,168	137,138	366,830	-6,333	255,416	738,990	384,771	803,582	269,974	-56,561	-227,338	2,131,866	
8 1936 Federal Report Surplus Deficit	-143,681	-184,518	-501,962	-582,692	-385,617	-164,153	34,454	424,520	1,593,329	-385,617	1,117,798	39,517	-58,200	-42,096	-169,869	976,828
9 1937 Federal Report Surplus Deficit	-138,124	-114,937	-435,765	-655,764	-442,309	-268,892	-74,139	-82,874	436,991	-33,012	-276,385	-51,021	-46,851	-184,308	-2,367,390	
10 1938 Federal Report Surplus Deficit	-145,052	-125,249	-227,757	1,264	223,982	427,661	406,279	857,549	1,594,133	713,768	464,694	-96,432	-115,107	-119,357	3,860,377	
11 1939 Federal Report Surplus Deficit	-142,401	-191,603	-448,330	-226,582	-225,665	-53,722	131,374	389,732	762,896	-160,086	-91,761	-65,682	-52,319	-142,951	-517,100	
12 1940 Federal Report Surplus Deficit	-127,365	-78,034	-354,723	-184,741	-227,738	594,709	176,370	235,015	647,607	-154,508	-139,462	-104,064	-82,346	-169,865	30,855	
13 1941 Federal Report Surplus Deficit	-171,087	-140,256	-293,344	-440,767	-330,098	-191,493	-102,741	-14,630	479,839	-129,998	-139,514	-42,358	-26,496	-120,544	-1,663,488	
14 1942 Federal Report Surplus Deficit	-160,460	-12,861	-76,149	123,142	-75,737	136,146	35,883	174,152	622,355	528,694	684,809	38,757	52,333	10,273	2,081,338	
15 1943 Federal Report Surplus Deficit	-149,286	-215,162	-302,382	385,985	229,649	536,620	736,110	859,550	1,104,565	1,831,568	1,314,283	142,024	-26,555	-180,355	6,266,615	
16 1944 Federal Report Surplus Deficit	-152,624	-136,307	-406,670	-366,066	-324,049	-282,790	-105,533	43,679	38,482	-374,762	-235,177	-40,602	-55,638	-186,354	-2,584,412	
17 1945 Federal Report Surplus Deficit	-150,400	-158,999	-374,957	-532,405	-386,253	-270,902	-110,329	-157,511	910,027	807,184	-203,803	-72,734	-40,738	-166,268	-908,088	
18 1946 Federal Report Surplus Deficit	-147,230	-106,976	-222,824	-15,097	14,473	386,102	494,656	863,084	1,857,705	806,316	1,027,466	72,102	-12,355	-89,491	4,927,931	
19 1947 Federal Report Surplus Deficit	-141,168	-58,493	631,024	1,040,639	457,377	684,383	313,539	340,098	1,500,974	917,025	816,715	28,545	-49,272	-134,627	6,346,760	
20 1948 Federal Report Surplus Deficit	301,090	213,609	109,869	804,089	134,568	363,122	219,483	574,287	2,206,508	1,922,361	1,200,901	447,526	241,212	-21,737	8,716,889	
21 1949 Federal Report Surplus Deficit	-95,864	-163,085	-214,023	50,194	-80,899	630,608	311,516	658,434	1,727,234	849,413	-187,458	-100,585	-100,997	-194,412	3,090,077	
22 1950 Federal Report Surplus Deficit	-167,969	-175,434	-310,059	861,876	768,796	701,412	527,969	474,048	1,244,078	1,888,958	1,901,041	434,345	198,022	-59,578	8,287,506	
23 1951 Federal Report Surplus Deficit	74,550	319,853	840,865	1,643,897	1,134,590	1,690,687	581,624	643,816	1,719,965	857,001	1,351,569	117,368	-53,915	-117,165	10,804,706	
24 1952 Federal Report Surplus Deficit	216,961	33,041	124,400	796,942	268,320	427,710	571,739	959,758	2,215,692	938,616	645,533	10,412	-73,382	-232,918	6,802,824	
25 1953 Federal Report Surplus Deficit	-136,059	-204,102	-473,295	-140,713	192,371	165,145	49,529	173,306	941,361	1,946,717	1,557,520	125,096	12,657	-96,745	4,112,788	
26 1954 Federal Report Surplus Deficit	-102,496	-78,170	-56,858	775,301	426,527	735,490	249,215	356,308	1,547,255	1,628,528	1,905,951	544,455	488,681	316,913	8,737,101	
27 1955 Federal Report Surplus Deficit	-81,631	27,324	-57,800	-239,770	-210,073	-252,159	-28,361	125,305	694,716	1,891,645	1,786,388	385,072	47,776	-146,734	3,941,698	
28 1956 Federal Report Surplus Deficit	-52,722	194,482	723,742	1,381,238	1,128,480	1,185,241	466,382	971,131	2,205,343	1,814,524	1,408,164	287,228	115,625	-88,173	11,740,685	
29 1957 Federal Report Surplus Deficit	-54,620	-169,255	-16,210	97,667	-90,928	385,568	454,073	322,397	2,142,936	1,922,733	337,706	-40,459	-61,039	-130,667	5,099,903	
30 1958 Federal Report Surplus Deficit	-135,621	-131,947	-349,878	262,715	80,348	311,753	136,321	431,642	1,677,012	1,623,869	127,175	-7,770	-84,571	-189,342	3,751,706	
31 1959 Federal Report Surplus Deficit	-116,886	75,108	446,654	1,137,705	835,247	972,312	382,614	302,142	1,302,351	1,574,576	1,615,812	394,403	246,850	443,862	9,612,749	
32 1960 Federal Report Surplus Deficit	547,270	495,971	517,054	417,087	56,410	320,592	827,317	616,953	681,391	1,117,437	803,011	72,303	-72,929	-206,401	6,193,465	
33 1961 Federal Report Surplus Deficit	-114,361	-106,967	-181,233	421,604	279,529	899,424	239,396	259,879	1,650,272	1,695,208	364,845	44,847	-63,244	-177,046	5,212,153	
34 1962 Federal Report Surplus Deficit	-182,300	-127,287	-245,808	73,753	47,028	-59,418	507,865	886,577	1,185,368	613,371	301,244	1,538	-40,363	-199,706	2,761,861	
35 1963 Federal Report Surplus Deficit	5,505	79,858	373,451	692,383	129,850	164,898	16,099	159,711	824,301	608,521	618,406	1,682	-13,852	-65,466	3,595,347	
36 1964 Federal Report Surplus Deficit	-150,565	-143,771	-189,305	-219,879	-178,039	-33,317	343,130	163,025	1,010,279	1,931,296	1,698,503	365,318	161,557	48,802	4,807,033	
37 1965 Federal Report Surplus Deficit	12,246	-28,574	788,230	1,668,549	1,654,894	1,293,453	185,671	896,999	1,921,377	1,075,415	586,826	250,882	121,925	-164,499	10,263,394	
38 1966 Federal Report Surplus Deficit	-54,875	-148,076	-113,606	-70,807	-66,944	-24,972	542,936	287,237	413,596	545,700	759,917	196,864	-52,652	-176,267	2,038,051	
39 1967 Federal Report Surplus Deficit	-152,619	-177,630	-74,524	977,500	672,384	800,999	136,095	-75,694	971,599	1,838,991	1,495,173	159,064	32,242	-105,357	6,498,222	
40 1968 Federal Report Surplus Deficit	-73,492	-81,709	-118,128	658,363	233,418	449,409	-22,072	82,687	333,796	1,235,200	916,570	221,582	92,015	178,728	4,106,367	

**Table 11.1.3**  
**Federal Report Surplus Deficit By Water Year**  
**Fiscal Year 2019**  
**BP-18-Final Rate Case Report Date: 6/1/2017**  
S144-RC-20170510-065615

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
<b>LLH-MWh - Surplus Deficit</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr1</b>	<b>Apr16</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug1</b>	<b>Aug16</b>	<b>Sep</b>	<b>Avg</b>
41 1969 Federal Report Surplus Deficit	57,657	211,441	174,479	1,088,366	1,251,176	844,166	502,726	903,964	2,015,492	1,198,924	803,648	-31,082	-77,108	-158,205	8,785,643
42 1970 Federal Report Surplus Deficit	-86,752	-120,954	-333,592	98,811	17,953	204,644	43,974	132,276	911,221	1,510,248	-23,014	-34,360	-14,908	-150,740	2,154,807
43 1971 Federal Report Surplus Deficit	-127,888	-122,117	-208,657	1,273,862	1,511,014	1,127,590	521,190	674,965	2,145,547	1,874,647	1,609,251	304,425	370,684	-55,914	10,898,598
44 1972 Federal Report Surplus Deficit	-25,865	-92,205	-45,841	1,340,820	1,264,189	1,934,936	820,640	461,408	2,085,655	1,847,602	1,693,925	463,429	418,416	-14,006	12,153,105
45 1973 Federal Report Surplus Deficit	-34,329	-111,602	-143,652	15,678	-180,859	-131,176	-166,587	32,855	451,569	-204,115	-138,552	-74,797	-77,380	-174,418	-937,366
46 1974 Federal Report Surplus Deficit	-138,134	-140,782	85,289	2,006,976	1,568,566	1,701,194	581,639	884,922	1,960,719	1,868,654	1,949,066	404,530	411,835	-47,605	13,096,869
47 1975 Federal Report Surplus Deficit	-165,753	-147,038	-326,050	231,776	149,165	416,538	44,953	139,589	1,455,609	1,787,668	1,700,393	121,395	79,267	1,663	5,489,177
48 1976 Federal Report Surplus Deficit	128,711	269,334	1,159,131	1,138,000	761,745	1,196,770	598,801	594,655	2,051,895	1,234,612	1,528,360	625,433	631,165	541,987	12,460,601
49 1977 Federal Report Surplus Deficit	-29,133	-127,381	-406,815	-331,847	-271,057	-246,619	-147,353	-13,154	-53,600	-262,275	-373,617	-373,617	-373,617	-262,275	-2,700,976
50 1978 Federal Report Surplus Deficit	-216,028	-121,306	-102,107	94,810	117,355	205,571	517,189	340,673	1,427,937	518,173	626,745	-34,588	-64,841	181,054	3,490,638
51 1979 Federal Report Surplus Deficit	-46,570	-134,564	-397,200	-126,491	-284,737	193,597	6,249	198,605	1,112,584	197,199	-269,502	-72,254	-43,224	-139,376	194,317
52 1980 Federal Report Surplus Deficit	-148,484	-143,441	-489,944	-206,789	-231,919	-133,802	159,146	400,876	1,819,206	1,232,006	153,332	-83,837	-98,745	-117,757	2,109,849
53 1981 Federal Report Surplus Deficit	-151,261	-139,402	426,477	1,145,002	729,013	168,708	-121,439	144,264	907,343	1,794,562	1,346,746	444,426	222,301	-108,411	6,808,329
54 1982 Federal Report Surplus Deficit	-120,318	-79,716	-122,421	536,090	1,525,941	1,600,579	477,387	428,434	1,796,585	1,693,049	1,870,321	373,617	325,135	143,062	10,447,747
55 1983 Federal Report Surplus Deficit	89,281	-54,433	-17,623	879,857	785,893	1,236,931	361,224	305,720	1,295,398	1,164,818	1,461,317	340,655	52,403	-20,566	7,880,875
56 1984 Federal Report Surplus Deficit	-55,720	369,525	73,223	397,339	457,257	709,319	559,198	703,055	1,316,920	1,490,674	1,143,961	254,578	-10,973	-10,583	7,397,772
57 1985 Federal Report Surplus Deficit	-37,378	-7,941	-143,176	-85,751	-93,931	3,198	308,231	438,796	987,879	192,732	-167,864	-111,020	-149,068	-128,238	1,006,469
58 1986 Federal Report Surplus Deficit	-132,538	195,158	-93,918	433,209	596,986	1,585,695	482,621	663,300	816,075	772,270	221,244	-51,761	-52,166	-186,362	5,249,810
59 1987 Federal Report Surplus Deficit	-168,631	-57,639	-111,851	-184,927	-294,075	82,242	-44,702	21,627	1,031,895	203,606	-236,361	-91,591	-90,522	-195,257	-136,186
60 1988 Federal Report Surplus Deficit	-151,300	-162,119	-493,531	-453,030	-476,715	-180,722	-69,229	46,705	327,873	200,765	-61,702	-58,368	-48,837	-184,366	-2,166,104
61 1989 Federal Report Surplus Deficit	-171,966	-74,676	-300,367	-337,201	-363,130	183,731	223,757	741,658	910,580	258,225	-177,287	-77,045	-54,294	-161,301	600,684
62 1990 Federal Report Surplus Deficit	-131,251	-98,875	-18,062	452,643	420,249	514,344	97,193	682,112	662,830	1,377,751	538,392	227,599	102,411	-174,003	4,653,333
63 1991 Federal Report Surplus Deficit	-175,480	261,490	336,508	925,494	414,973	797,337	323,035	263,834	1,062,861	1,079,410	1,554,989	411,816	87,882	-189,943	7,154,205
64 1992 Federal Report Surplus Deficit	-131,120	-113,185	-465,672	-257,638	-237,601	177,572	-137,931	14,531	341,167	-315,831	-222,847	-77,677	-67,304	-221,058	-1,714,594
65 1993 Federal Report Surplus Deficit	-159,391	-131,744	-404,960	-506,128	-503,410	-41,000	73,645	173,539	1,102,185	460,021	-2,406	-24,701	11,515	-97,843	-50,677
66 1994 Federal Report Surplus Deficit	-137,287	-81,601	-335,959	-585,421	-399,644	-252,983	-76,760	27,450	621,975	222,909	-136,572	-58,842	-53,399	-159,485	-1,405,620
67 1995 Federal Report Surplus Deficit	-153,876	-232,744	-375,549	-97,591	96,163	406,824	73,663	151,040	767,099	1,261,306	221,635	-38,375	-66,609	-57,545	1,955,442
68 1996 Federal Report Surplus Deficit	15,945	610,946	1,807,413	1,801,580	1,461,349	1,867,059	498,490	943,479	1,806,537	1,234,746	1,551,804	368,329	86,991	-96,305	13,958,363
69 1997 Federal Report Surplus Deficit	-109,979	-48,359	124,647	1,880,999	1,734,116	1,842,521	599,708	972,263	2,143,060	1,887,857	1,673,429	296,743	361,553	135,349	13,493,909
70 1998 Federal Report Surplus Deficit	367,061	145,189	-138,432	-14,385	-6,975	132,137	66,274	288,525	1,752,444	1,573,930	562,068	86,898	-37,498	-144,856	4,632,377
71 1999 Federal Report Surplus Deficit	-122,241	-176,629	36,056	1,225,257	1,067,467	1,263,122	334,783	520,004	1,142,256	1,642,894	1,702,461	512,404	373,329	-42,515	9,478,648
72 2000 Federal Report Surplus Deficit	-98,305	436,154	457,408	312,904	113,877	344,074	496,194	829,115	1,279,714	149,813	576,850	59,090	-84,711	-223,234	4,648,943
73 2001 Federal Report Surplus Deficit	-129,068	-164,724	-406,864	-374,014	-325,060	-195,433	-118,037	13,289	183,051	-524,306	-231,608	-36,943	-62,673	-256,953	-2,629,342
74 2002 Federal Report Surplus Deficit	-211,398	-165,233	-341,909	-384,761	-279,654	-28,026	174,052	532,017	765,570	1,629,049	1,098,031	-3,273	-56,816	-136,991	2,590,658
75 2003 Federal Report Surplus Deficit	-125,078	-109,333	-390,739	-379,632	-357,785	217,614	126,972	134,583	697,118	1,034,059	-153,105	-88,773	-90,428	-233,024	282,449
76 2004 Federal Report Surplus Deficit	-162,332	-54,778	-240,580	-229,339	-321,401	43,575	38,244	80,026	623,773	156,442	-77,157	-48,464	-72	47,017	-145,046
77 2005 Federal Report Surplus Deficit	-54,604	-162,468	-67,116	-13,045	-55,905	-144,574	-112,074	25,845	817,891	347,549	106,687	-28,436	-42,303	-135,379	482,067
78 2006 Federal Report Surplus Deficit	-205,458	-122,390	-110,020	431,703	511,716	424,761	573,239	742,585	1,661,375	1,546,677	392,007	-73,857	-103,138	-213,444	5,455,756
79 2007 Federal Report Surplus Deficit	-124,369	-29,799	-234,163	256,866	35,109	498,361	336,453	235,353	846,300	657,077	603,652	-60,733	-99,024	-243,050	2,678,031
80 2008 Federal Report Surplus Deficit	-128,127	-61,546	-399,037	-273,654	-206,907	-21,387	96,272	-56,877	1,334,563	1,999,449	692,233	33,753	31,689	-199,908	2,840,515
<b>81 Bottom 10 pct</b>	<b>-126,668</b>	<b>-140,852</b>	<b>-423,424</b>	<b>-453,862</b>	<b>-380,735</b>	<b>-244,361</b>	<b>-77,244</b>	<b>14,955</b>	<b>202,294</b>	<b>-274,669</b>	<b>-195,721</b>	<b>-46,320</b>	<b>-49,434</b>	<b>-196,225</b>	<b>-2,392,267</b>
<b>82 Middle 80 pct</b>	<b>-88,533</b>	<b>-53,798</b>	<b>-97,299</b>	<b>239,196</b>	<b>159,242</b>	<b>380,169</b>	<b>233,076</b>	<b>372,336</b>	<b>1,158,588</b>	<b>1,034,796</b>	<b>638,308</b>	<b>87,390</b>	<b>8,232</b>	<b>-105,531</b>	<b>3,966,172</b>
<b>83 Top 10 pct</b>	<b>-29,423</b>	<b>123,894</b>	<b>560,824</b>	<b>1,558,421</b>	<b>1,320,506</b>	<b>1,568,250</b>	<b>583,559</b>	<b>768,330</b>	<b>2,014,840</b>	<b>1,577,455</b>	<b>1,595,696</b>	<b>358,436</b>	<b>292,794</b>	<b>32,271</b>	<b>12,325,854</b>

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