

BP-20 Rate Proceeding

Initial Proposal

Power Loads and Resources Study Documentation

BP-20-E-BPA-03A

January 2019



POWER LOADS AND RESOURCES STUDY DOCUMENTATION

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COMMONLY USED ACRONYMS AND SHORT FORMS

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

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

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

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

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

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

Table 1.1.1
Load Following Service Customers

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

Table 1.1.2
Tier 1 Block Service Customers

	A	B	C
1	Okanogan PUD	Pend Oreille	Seattle

Table 1.1.3
Slice Service Customers

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

Table 1.1.4
USBR Obligation Customers

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

Table 1.2.1
BPA Sales to Preference and Legacy Customers
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Pacific Northwest															
1 Load Following	2,930	3,413	3,891	3,834	3,585	3,209	3,241	3,241	3,249	3,447	3,715	3,542	3,523	3,157	3,434
2 Cooperative	1,522	1,807	2,092	2,045	1,915	1,676	1,635	1,635	1,669	1,848	1,997	1,915	1,900	1,641	1,813
3 Municipality	486	594	663	670	623	545	515	515	476	484	519	519	513	474	547
4 Public Utility District	706	858	957	952	888	797	735	735	669	653	677	685	680	667	770
5 Federal Entities	108	136	161	156	146	129	112	112	106	108	118	115	114	108	125
6 USBR	108	18	18	10	14	63	244	244	329	354	405	308	315	266	179
7 Tier 1 Block	539	889	888	976	887	871	427	427	152	21	346	392	390	645	585
8 Municipality	488	800	787	854	776	770	385	385	122	0	293	349	347	586	517
9 Public Utility District	51	90	101	122	111	101	42	42	30	21	53	43	43	59	69
10 Slice Block	1,159	1,356	1,559	1,553	1,373	1,312	1,216	1,216	1,179	1,155	1,210	1,182	1,182	1,126	1,282
11 Municipality	268	317	385	381	352	354	313	313	266	256	281	275	275	277	310
12 Public Utility District	891	1,039	1,174	1,171	1,021	958	904	904	913	899	930	907	907	850	972
13 Slice Output from T1 System	1,386	1,819	1,740	1,451	1,402	1,463	1,346	1,240	1,603	2,152	1,607	1,670	1,464	1,457	1,578
14 Municipality	329	431	413	344	332	347	319	294	380	510	381	396	347	346	374
15 Public Utility District	1,058	1,387	1,327	1,107	1,069	1,116	1,027	946	1,223	1,642	1,226	1,274	1,117	1,112	1,204
Total Power Sales Contracts															
16 Cooperative	1,522	1,807	2,092	2,045	1,915	1,676	1,635	1,635	1,669	1,848	1,997	1,915	1,900	1,641	1,813
17 Federal Entities	108	136	161	156	146	129	112	112	106	108	118	115	114	108	125
18 Municipality	1,571	2,142	2,248	2,249	2,083	2,015	1,531	1,506	1,245	1,251	1,474	1,538	1,482	1,683	1,748
19 Public Utility District	2,705	3,374	3,559	3,352	3,089	2,972	2,708	2,627	2,834	3,215	2,886	2,909	2,747	2,688	3,014
20 USBR	108	18	18	10	14	63	244	244	329	354	405	308	315	266	179
21 Total Power Sales Contracts	6,013	7,477	8,078	7,813	7,247	6,854	6,230	6,124	6,183	6,775	6,878	6,786	6,558	6,386	6,879

Table 1.2.1
BPA Sales to Preference and Legacy Customers
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Pacific Northwest															
1 Load Following	2,947	3,432	3,911	3,852	3,636	3,206	3,258	3,258	3,263	3,462	3,730	3,533	3,560	3,171	3,451
2 Cooperative	1,528	1,815	2,101	2,052	1,957	1,681	1,642	1,642	1,674	1,854	2,003	1,903	1,924	1,647	1,822
3 Municipality	489	597	666	673	632	547	517	517	478	486	521	514	522	476	550
4 Public Utility District	709	861	960	955	879	780	737	737	670	655	679	680	688	669	769
5 Federal Entities	113	141	166	162	154	134	118	118	111	113	123	119	121	113	131
6 USBR	108	18	18	10	14	63	244	244	329	354	405	316	306	266	179
7 Tier 1 Block	540	889	888	976	919	871	428	428	152	21	347	390	393	646	587
8 Municipality	489	802	789	857	806	772	386	386	122	0	294	347	350	588	520
9 Public Utility District	50	88	99	120	113	99	42	42	30	21	53	43	43	58	68
10 Slice Block	1,191	1,392	1,598	1,591	1,459	1,346	1,250	1,250	1,211	1,187	1,243	1,214	1,214	1,158	1,320
11 Municipality	269	318	387	383	367	355	314	314	267	258	282	276	276	278	313
12 Public Utility District	922	1,074	1,211	1,208	1,092	990	936	936	944	929	960	938	938	880	1,007
13 Slice Output from T1 System	1,390	1,820	1,744	1,453	1,405	1,467	1,244	1,094	1,610	2,084	1,608	1,670	1,460	1,456	1,565
14 Municipality	330	432	414	345	333	348	295	260	382	494	381	396	346	345	371
15 Public Utility District	1,060	1,389	1,330	1,109	1,072	1,119	949	835	1,228	1,590	1,226	1,274	1,113	1,111	1,194
Total Power Sales Contracts															
16 Cooperative	1,528	1,815	2,101	2,052	1,957	1,681	1,642	1,642	1,674	1,854	2,003	1,903	1,924	1,647	1,822
17 Federal Entities	113	141	166	162	154	134	118	118	111	113	123	119	121	113	131
18 Municipality	1,577	2,149	2,256	2,257	2,137	2,023	1,512	1,476	1,250	1,238	1,478	1,533	1,494	1,687	1,753
19 Public Utility District	2,741	3,411	3,600	3,391	3,155	2,988	2,664	2,550	2,872	3,195	2,918	2,934	2,782	2,718	3,037
20 USBR	108	18	18	10	14	63	244	244	329	354	405	316	306	266	179
21 Total Power Sales Contracts	6,067	7,534	8,141	7,873	7,418	6,890	6,180	6,030	6,237	6,754	6,927	6,806	6,627	6,431	6,923

Table 1.2.2
BPA Sales to Preference and Legacy Customers
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
1 Load Following	1,340,421	1,455,224	1,688,586	1,688,153	1,511,342	1,424,389	712,116	712,116	1,398,656	1,516,703	1,638,295	784,477	784,477	1,335,661	17,990,616
2 Cooperative	704,780	768,802	908,303	896,810	802,019	748,214	360,319	360,319	726,140	817,470	888,042	434,548	434,548	706,757	9,557,070
3 Municipality	230,313	257,268	291,134	299,189	267,217	247,285	116,442	116,442	214,629	223,247	242,443	121,672	121,672	212,203	2,961,155
4 Public Utility District	327,989	367,030	415,828	420,919	377,835	356,745	162,700	162,700	291,544	292,743	305,399	156,006	156,006	289,596	4,083,039
5 Federal Entities	48,352	55,450	67,705	66,298	59,207	55,582	23,912	23,912	44,996	47,114	51,969	25,945	25,945	45,153	641,540
6 USBR	28,988	6,675	5,617	4,937	5,065	16,563	48,743	48,743	121,347	136,129	150,441	46,306	46,306	81,952	747,811
7 Tier 1 Block	239,791	381,680	391,620	432,080	368,452	385,131	91,876	91,876	66,330	8,808	152,952	86,657	86,657	276,947	3,060,857
8 Municipality	217,876	345,878	351,325	381,283	324,090	343,154	83,065	83,065	54,469	0	130,726	77,618	77,618	253,281	2,723,448
9 Public Utility District	21,915	35,802	40,295	50,798	44,361	41,976	8,810	8,810	11,862	8,808	22,227	9,039	9,039	23,666	337,409
10 Slice Block	500,565	542,490	623,765	645,875	549,365	545,589	252,991	252,991	471,760	480,476	503,486	245,756	245,756	450,541	6,311,407
11 Municipality	115,750	126,735	154,001	158,655	140,782	147,068	65,005	65,005	106,436	106,683	116,812	57,120	57,120	110,618	1,527,790
12 Public Utility District	384,815	415,755	469,764	487,220	408,582	398,521	187,985	187,985	365,324	373,793	386,674	188,636	188,636	339,924	4,783,616
13 Slice Output from T1 System	671,570	818,703	801,603	677,069	616,779	689,850	306,180	281,902	758,390	1,005,785	833,446	422,905	377,170	671,395	8,932,747
14 Municipality	159,266	194,159	190,103	160,570	146,272	163,601	72,612	66,854	179,855	238,526	197,655	100,294	89,447	159,224	2,118,438
15 Public Utility District	512,305	624,544	611,499	516,499	470,507	526,249	233,568	215,047	578,535	767,259	635,791	322,611	287,722	512,171	6,814,309
Total Power Sales Contracts															
16 Cooperative	704,780	768,802	908,303	896,810	802,019	748,214	360,319	360,319	726,140	817,470	888,042	434,548	434,548	706,757	9,557,070
17 Federal Entities	48,352	55,450	67,705	66,298	59,207	55,582	23,912	23,912	44,996	47,114	51,969	25,945	25,945	45,153	641,540
18 Municipality	723,205	924,040	986,563	999,696	878,361	901,108	337,124	331,366	555,389	568,456	687,636	356,704	345,858	735,325	9,330,832
19 Public Utility District	1,247,023	1,443,131	1,537,386	1,475,437	1,301,286	1,323,492	593,064	574,543	1,247,265	1,442,603	1,350,090	676,292	641,403	1,165,358	16,018,373
20 USBR	28,988	6,675	5,617	4,937	5,065	16,563	48,743	48,743	121,347	136,129	150,441	46,306	46,306	81,952	747,811
21 Total Power Sales Contracts	2,752,347	3,198,097	3,505,574	3,443,178	3,045,938	3,044,959	1,363,162	1,338,883	2,695,136	3,011,772	3,128,179	1,539,796	1,494,060	2,734,545	36,295,627

Table 1.2.2
BPA Sales to Preference and Legacy Customers
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
1 Load Following	1,349,550	1,436,446	1,727,353	1,667,084	1,476,553	1,450,195	716,281	716,281	1,404,713	1,524,159	1,645,372	727,768	849,063	1,341,992	18,032,811
2 Cooperative	708,762	761,701	923,707	888,554	790,157	760,943	362,374	362,374	728,094	820,951	891,037	402,850	469,991	709,421	9,580,918
3 Municipality	231,721	252,499	299,530	293,614	260,870	254,104	116,981	116,981	215,650	224,264	243,472	112,774	131,570	212,970	2,967,001
4 Public Utility District	329,489	359,325	427,137	412,591	360,404	357,666	163,176	163,176	292,490	293,421	306,160	144,365	168,426	290,292	4,068,117
5 Federal Entities	50,589	56,920	70,678	67,720	60,301	58,426	25,008	25,008	47,132	49,395	54,262	25,035	29,207	47,358	667,038
6 USBR	28,988	6,001	6,301	4,605	4,820	19,055	48,743	48,743	121,347	136,129	150,441	42,744	49,868	81,952	749,737
7 Tier 1 Block	240,195	380,503	393,514	430,260	368,231	386,863	92,066	92,066	66,454	8,783	153,094	80,092	93,441	277,258	3,062,821
8 Municipality	218,499	346,867	352,330	382,373	325,017	344,136	83,303	83,303	54,625	0	131,099	71,853	83,828	254,005	2,731,238
9 Public Utility District	21,696	33,636	41,184	47,887	43,213	42,727	8,763	8,763	11,829	8,783	21,995	8,240	9,613	23,253	331,583
10 Slice Block	514,605	534,533	664,832	636,398	560,165	581,384	259,943	259,943	484,497	493,755	516,924	233,052	271,894	463,269	6,475,194
11 Municipality	116,408	122,291	160,998	153,378	140,746	153,519	65,348	65,348	106,986	107,253	117,464	53,028	61,866	111,222	1,535,854
12 Public Utility District	398,196	412,243	503,834	483,019	419,419	427,865	194,595	194,595	377,511	386,502	399,460	180,024	210,028	352,047	4,939,340
13 Slice Output from T1 System	674,428	826,181	807,994	680,778	592,940	694,398	279,776	247,584	792,896	973,765	812,766	419,261	377,539	669,236	8,849,545
14 Municipality	159,943	195,932	191,619	161,449	140,618	164,679	66,350	58,716	188,039	230,932	192,751	99,430	89,535	158,712	2,098,706
15 Public Utility District	514,485	630,249	616,375	519,329	452,322	529,719	213,426	188,868	604,858	742,833	620,015	319,832	288,004	510,524	6,750,838
Total Power Sales Contracts															
16 Cooperative	708,762	761,701	923,707	888,554	790,157	760,943	362,374	362,374	728,094	820,951	891,037	402,850	469,991	709,421	9,580,918
17 Federal Entities	50,589	56,920	70,678	67,720	60,301	58,426	25,008	25,008	47,132	49,395	54,262	25,035	29,207	47,358	667,038
18 Municipality	726,572	917,589	1,004,477	990,815	867,251	916,438	331,982	324,347	565,299	562,449	684,786	337,084	366,799	736,910	9,332,800
19 Public Utility District	1,263,867	1,435,453	1,588,530	1,462,826	1,275,359	1,357,977	579,960	555,402	1,286,688	1,431,540	1,347,630	652,461	676,071	1,176,116	16,089,878
20 USBR	28,988	6,001	6,301	4,605	4,820	19,055	48,743	48,743	121,347	136,129	150,441	42,744	49,868	81,952	749,737
21 Total Power Sales Contracts	2,778,778	3,177,664	3,593,693	3,414,520	2,997,889	3,112,840	1,348,066	1,315,874	2,748,560	3,000,463	3,128,156	1,460,174	1,591,936	2,751,756	36,420,371

Table 1.2.3
BPA Sales to Preference and Legacy Customers
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
1 Load Following	839,129	1,005,565	1,206,218	1,164,079	983,808	960,174	454,637	454,637	1,018,576	964,834	1,125,566	490,697	568,175	937,379	12,173,475
2 Cooperative	427,398	534,263	648,513	624,892	530,652	496,918	228,264	228,264	515,739	512,950	597,390	254,921	295,171	475,054	6,370,389
3 Municipality	131,089	171,022	202,197	199,041	166,175	157,580	68,850	68,850	139,739	125,064	143,724	65,173	75,463	129,323	1,843,289
4 Public Utility District	197,300	251,447	295,962	287,536	239,925	235,207	101,883	101,883	205,858	177,590	198,459	90,691	105,011	190,887	2,679,641
5 Federal Entities	31,685	42,412	51,974	50,128	42,412	40,247	16,479	16,479	33,691	30,474	35,462	15,509	17,958	32,295	457,206
6 USBR	51,657	6,421	7,572	2,481	4,644	30,222	39,161	39,161	123,551	118,755	150,532	64,402	74,571	109,819	822,950
7 Tier 1 Block	161,078	259,316	268,871	294,241	248,887	261,766	61,815	61,815	46,514	6,436	104,675	54,565	63,180	187,787	2,080,946
8 Municipality	145,251	230,585	234,217	254,189	216,060	228,770	55,377	55,377	36,313	0	87,150	47,959	55,532	168,854	1,815,632
9 Public Utility District	15,827	28,731	34,654	40,052	32,827	32,997	6,438	6,438	10,201	6,436	17,525	6,605	7,648	18,933	265,314
10 Slice Block	361,512	435,339	536,448	509,248	406,535	428,869	184,876	184,876	405,721	351,115	396,979	179,591	207,948	360,427	4,949,483
11 Municipality	83,596	101,702	132,443	125,093	104,180	115,605	47,503	47,503	91,537	77,960	92,102	41,742	48,332	88,493	1,197,793
12 Public Utility District	277,916	333,636	404,005	384,155	302,354	313,264	137,373	137,373	314,184	273,155	304,877	137,850	159,615	271,934	3,751,690
13 Slice Output from T1 System	359,919	492,440	492,779	402,318	358,784	397,105	178,277	164,386	434,211	543,940	362,057	178,207	184,914	377,758	4,927,095
14 Municipality	85,356	116,784	116,864	95,411	85,087	94,175	42,279	38,985	102,975	128,998	85,863	42,262	43,853	89,587	1,168,481
15 Public Utility District	274,563	375,656	375,914	306,907	273,697	302,930	135,998	125,401	331,236	414,943	276,194	135,944	141,061	288,171	3,758,614
Total Power Sales Contracts															
16 Cooperative	427,398	534,263	648,513	624,892	530,652	496,918	228,264	228,264	515,739	512,950	597,390	254,921	295,171	475,054	6,370,389
17 Federal Entities	31,685	42,412	51,974	50,128	42,412	40,247	16,479	16,479	33,691	30,474	35,462	15,509	17,958	32,295	457,206
18 Municipality	445,292	620,094	685,721	673,734	571,503	596,130	214,009	210,715	370,563	332,021	408,839	197,136	223,181	476,257	6,025,195
19 Public Utility District	765,606	989,471	1,110,536	1,018,649	848,803	884,398	381,692	371,095	861,479	872,124	797,055	371,091	413,336	769,926	10,455,259
20 USBR	51,657	6,421	7,572	2,481	4,644	30,222	39,161	39,161	123,551	118,755	150,532	64,402	74,571	109,819	822,950
21 Total Power Sales Contracts	1,721,638	2,192,661	2,504,316	2,369,885	1,998,014	2,047,914	879,605	865,714	1,905,022	1,866,325	1,989,278	903,059	1,024,217	1,863,351	24,130,998

Table 1.2.3
BPA Sales to Preference and Legacy Customers
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
1 Load Following	842,769	1,037,991	1,182,334	1,198,874	966,751	931,690	456,644	456,644	1,023,037	968,188	1,129,929	544,023	518,118	941,020	12,198,013
2 Cooperative	427,804	546,736	639,358	638,254	524,888	488,345	228,872	228,872	517,580	513,742	599,228	282,200	268,762	476,291	6,380,931
3 Municipality	131,812	178,014	196,076	206,960	163,553	152,545	69,122	69,122	140,249	125,516	144,197	72,258	68,818	129,661	1,847,903
4 Public Utility District	198,173	261,273	287,007	298,152	230,238	221,740	102,168	102,168	206,259	178,113	198,880	100,442	95,660	191,289	2,671,563
5 Federal Entities	33,323	44,873	53,006	52,695	43,517	41,330	17,320	17,320	35,398	32,062	37,092	17,941	17,087	33,961	476,925
6 USBR	51657	7096	6887	2813	4555	27730	39161	39161	123551	118755	150532	71182	67792	109819	820691
7 Tier 1 Block	161,335	260,765	267,359	296,099	249,088	260,184	61,939	61,939	46,590	6,419	104,742	60,369	57,494	187,939	2,082,259
8 Municipality	145,666	231,245	234,886	254,916	216,678	229,424	55,535	55,535	36,417	0	87,400	53,159	50,628	169,337	1,820,825
9 Public Utility District	15,669	29,520	32,472	41,183	32,410	30,759	6,404	6,404	10,173	6,419	17,342	7,210	6,866	18,602	261,433
10 Slice Block	371,652	469,116	524,194	547,312	420,121	418,537	189,957	189,957	416,675	360,818	407,574	203,920	194,210	370,609	5,084,651
11 Municipality	84,071	107,325	126,941	131,908	105,559	110,519	47,754	47,754	92,010	78,376	92,615	46,399	44,190	88,976	1,204,395
12 Public Utility District	287,580	361,792	397,254	415,404	314,562	308,019	142,203	142,203	324,665	282,442	314,958	157,521	150,020	281,633	3,880,256
13 Slice Output from T1 System	359,507	486,318	489,596	400,451	351,095	395,778	168,132	146,434	405,119	526,678	383,233	181,849	182,942	379,326	4,856,457
14 Municipality	85,259	115,332	116,110	94,969	83,264	93,860	39,873	34,727	96,076	124,904	90,885	43,126	43,385	89,959	1,151,729
15 Public Utility District	274,249	370,986	373,486	305,482	267,831	301,917	128,259	111,706	309,043	401,774	292,348	138,723	139,556	289,368	3,704,728
Total Power Sales Contracts															
16 Cooperative	427,804	546,736	639,358	638,254	524,888	488,345	228,872	228,872	517,580	513,742	599,228	282,200	268,762	476,291	6,380,931
17 Federal Entities	33,323	44,873	53,006	52,695	43,517	41,330	17,320	17,320	35,398	32,062	37,092	17,941	17,087	33,961	476,925
18 Municipality	446,808	631,915	674,013	688,752	569,054	586,348	212,285	207,139	364,751	328,796	415,097	214,943	207,020	477,933	6,024,853
19 Public Utility District	775,671	1,023,570	1,090,219	1,060,222	845,041	862,435	379,034	362,481	850,141	868,748	823,528	403,896	392,102	780,891	10,517,980
20 USBR	51,657	7,096	6,887	2,813	4,555	27,730	39,161	39,161	123,551	118,755	150,532	71,182	67,792	109,819	820,691
21 Total Power Sales Contracts	1,735,263	2,254,190	2,463,483	2,442,736	1,987,055	2,006,188	876,672	854,973	1,891,421	1,862,102	2,025,477	990,162	952,763	1,878,894	24,221,380

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

Table 2.1.1
Bonneville Power Administration - Power Services Exports
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Canada															
Contracts															
1 BPA-P to BCHP Trty CEA	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	453.5	425.1	438.9	453.5
2 BPA-P to BCHP NTSA Del	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.5	60.8	145.7	0.0	10.7
3 Total Exports to CAN	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	477.9	514.3	570.8	438.9	464.2
Pacific Southwest															
Contracts															
4 BPA-P to Other Entities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Intertie Losses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Total Exports to PSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Exports															
7 Federal Entities	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	477.9	514.3	570.8	438.9	464.2
8 Total Exports	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	456.4	477.9	514.3	570.8	438.9	464.2

Table 2.1.1
Bonneville Power Administration - Power Services Exports
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Canada															
Contracts															
1 BPA-P to BCHP Trty CEA	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	418.6	457.8	438.9	438.9
2 BPA-P to BCHP NTSA Del	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.5	60.8	145.7	0.0	10.7
3 Total Exports to CAN	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	460.4	479.4	603.5	438.9	449.6
Pacific Southwest															
Contracts															
4 BPA-P to Other Entities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 Intertie Losses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 Total Exports to PSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Exports															
7 Federal Entities	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	460.4	479.4	603.5	438.9	449.6
8 Total Exports	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	460.4	479.4	603.5	438.9	449.6

Table 2.1.2
Bonneville Power Administration - Power Services Exports
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
1 BPA-P to BCHP Trty CEA	339,588	329,090	339,588	339,588	317,679	339,132	164,316	164,316	339,588	328,633	339,588	163,254	163,254	315,975	3,983,589
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	8,944	12,646	30,306	0	51,896
3 Total Exports to CAN	339,588	329,090	339,588	339,588	317,679	339,132	164,316	164,316	339,588	328,633	348,532	175,900	193,559	315,975	4,035,485
Pacific Southwest															
Contracts															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Exports to PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports															
7 Federal Entities	339,588	329,090	339,588	339,588	317,679	339,132	164,316	164,316	339,588	328,633	348,532	175,900	193,559	315,975	4,035,485
8 Total Exports	339,588	329,090	339,588	339,588	317,679	339,132	164,316	164,316	339,588	328,633	348,532	175,900	193,559	315,975	4,035,485

Table 2.1.2
Bonneville Power Administration - Power Services Exports
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
1 BPA-P to BCHP Trty CEA	326,507	316,413	326,507	326,507	294,910	326,068	157,987	157,987	326,507	315,975	326,507	150,696	175,812	315,975	3,844,359
2 BPA-P to BCHP NTSA Del	0	0	0	0	0	0	0	0	0	0	8,944	11,674	32,637	0	53,254
3 Total Exports to CAN	326,507	316,413	326,507	326,507	294,910	326,068	157,987	157,987	326,507	315,975	335,451	162,369	208,448	315,975	3,897,613
Pacific Southwest															
Contracts															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Exports to PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports															
7 Federal Entities	326,507	316,413	326,507	326,507	294,910	326,068	157,987	157,987	326,507	315,975	335,451	162,369	208,448	315,975	3,897,613
8 Total Exports	326,507	316,413	326,507	326,507	294,910	326,068	157,987	157,987	326,507	315,975	335,451	162,369	208,448	315,975	3,897,613

Table 2.1.3
Bonneville Power Administration - Power Services Exports
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
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	7,052	9,242	25,643	0	41,937
3 Total Exports to CAN	0	0	0	0	0	0	0	0	0	0	7,052	9,242	25,643	0	41,937
Pacific Southwest															
Contracts															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Exports to PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports															
7 Federal Entities	0	0	0	0	0	0	0	0	0	0	7,052	9,242	25,643	0	41,937
8 Total Exports	0	0	0	0	0	0	0	0	0	0	7,052	9,242	25,643	0	41,937

Table 2.1.3
Bonneville Power Administration - Power Services Exports
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
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	7,052	10,214	23,312	0	40,578
3 Total Exports to CAN	0	0	0	0	0	0	0	0	0	0	7,052	10,214	23,312	0	40,578
Pacific Southwest															
Contracts															
4 BPA-P to Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Intertie Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Exports to PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports															
7 Federal Entities	0	0	0	0	0	0	0	0	0	0	7,052	10,214	23,312	0	40,578
8 Total Exports	0	0	0	0	0	0	0	0	0	0	7,052	10,214	23,312	0	40,578

Table 2.2.1
Bonneville Power Administration - Power Services: Imports
Fiscal Year 2020
BP20 Initial Proposal Report Date: **9/19/2018**
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Canada															
Contracts															
1 BCHP to BPA-P Trty LCALgcyRt	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2 Total Imports From CAN	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Imports															
3 Federal Entities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4 Total Imports	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Table 2.2.1
Bonneville Power Administration - Power Services: Imports
Fiscal Year 2021
BP20 Initial Proposal Report Date: **9/19/2018**
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Canada															
Contracts															
1 BCHP to BPA-P Trty LCALgcyRt	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2 Total Imports From CAN	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Imports															
3 Federal Entities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
4 Total Imports	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Table 2.2.2
Bonneville Power Administration - Power Services: Imports
Fiscal Year 2020
BP20 Initial Proposal Report Date: **9/19/2018**
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
1 BCHP to BPA-P Trty LCALgcyRt	432	400	400	416	400	416	208	208	400	416	416	208	208	400	4,928
2 Total Imports From CAN	432	400	400	416	400	416	208	208	400	416	416	208	208	400	4,928
Total Imports															
3 Federal Entities	432	400	400	416	400	416	208	208	400	416	416	208	208	400	4,928
4 Total Imports	432	400	400	416	400	416	208	208	400	416	416	208	208	400	4,928

Table 2.2.2
Bonneville Power Administration - Power Services: Imports
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
1 BCHP to BPA-P Trty LCALgcyRt	432	384	416	400	384	432	208	208	400	416	416	192	224	400	4912
2 Total Imports From CAN	432	384	416	400	384	432	208	208	400	416	416	192	224	400	4,912
Total Imports															
3 Federal Entities	432	384	416	400	384	432	208	208	400	416	416	192	224	400	4,912
4 Total Imports	432	384	416	400	384	432	208	208	400	416	416	192	224	400	4,912

Table 2.2.3
Bonneville Power Administration - Power Services: Imports
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
1 BCHP to BPA-P Trty LCALgcyRt	312	321	344	328	296	327	152	152	344	304	328	152	176	320	3,856
2 Total Imports From CAN	312	321	344	328	296	327	152	152	344	304	328	152	176	320	3,856
Total Imports															
3 Federal Entities	312	321	344	328	296	327	152	152	344	304	328	152	176	320	3,856
4 Total Imports	312	321	344	328	296	327	152	152	344	304	328	152	176	320	3,856

Table 2.2.3
Bonneville Power Administration - Power Services: Imports
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Canada															
Contracts															
1 BCHP to BPA-P Trty LCALgcyRt	312	337	328	344	288	311	152	152	344	304	328	168	160	320	3848
2 Total Imports From CAN	312	337	328	344	288	311	152	152	344	304	328	168	160	320	3,848
Total Imports															
3 Federal Entities	312	337	328	344	288	311	152	152	344	304	328	168	160	320	3,848
4 Total Imports	312	337	328	344	288	311	152	152	344	304	328	168	160	320	3,848

Table 2.3.1
Bonneville Power Administration - Power Services: Intra-Regional Transfers
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Intra-Regional Transfers															
Contracts	19.0	22.4	20.1	19.1	18.5	16.3	19.4	19.4	19.3	21.0	21.2	18.9	19.0	18.3	19.4
1 BPA-P to AVWP Setl WNP3 Del	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 BPA-P to BPA-T Ops IntrlAgmt	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
3 BPA-P to PPL NSP RIn	4.4	5.3	3.7	3.2	2.7	2.2	4.7	4.7	5.0	5.0	6.3	5.4	5.4	4.3	4.4
4 BPA-P to PSE Ops UBkr Repl	0.0	3.9	3.8	3.9	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
5 Other Entities to BPA-P	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 PPL to BPA-P NSP SOut	5.1	3.8	3.2	2.5	2.4	4.6	5.2	5.2	4.8	6.6	5.4	4.1	4.2	4.6	4.4
7 Total Intra-Regional Transfers	19.0	22.4	20.1	19.1	18.5	16.3	19.4	19.4	19.3	21.0	21.2	18.9	19.0	18.3	19.4
Intra-Regional Contracts Out															
8 Federal Entities	13.9	18.6	16.9	16.6	16.1	11.7	14.2	14.2	14.5	14.4	15.8	14.8	14.8	13.7	15.1
9 Investor Owned Utilities	5.1	3.8	3.2	2.5	2.4	4.6	5.2	5.2	4.8	6.6	5.4	4.1	4.2	4.6	4.4
10 Total Regional Contracts Out	19.0	22.4	20.1	19.1	18.5	16.3	19.4	19.4	19.3	21.0	21.2	18.9	19.0	18.3	19.4
Intra-Regional Contracts In															
11 Federal Entities	14.5	13.2	12.7	11.9	11.8	14.0	14.7	14.7	14.2	16.0	14.8	13.6	13.6	14.0	13.8
12 Investor Owned Utilities	4.4	9.2	7.5	7.2	6.7	2.2	4.7	4.7	5.0	5.0	6.3	5.4	5.4	4.3	5.7
13 Total Regional Contracts In	19.0	22.4	20.1	19.1	18.5	16.3	19.4	19.4	19.3	21.0	21.2	18.9	19.0	18.3	19.4

Table 2.3.1
Bonneville Power Administration - Power Services: Intra-Regional Transfers
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Intra-Regional Transfers															
Contracts	13.8	13.2	13.4	13.2	13.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	11.1
1 BPA-P to AVWP Setl WNP3 Del	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 BPA-P to BPA-T Ops IntrlAgmt	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
3 BPA-P to PPL NSP RIn	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
4 BPA-P to PSE Ops UBkr Repl	0.0	3.7	3.9	3.8	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
5 Other Entities to BPA-P	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 PPL to BPA-P NSP SOut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 Total Intra-Regional Transfers	13.8	13.2	13.4	13.2	13.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	11.1
Intra-Regional Contracts Out															
8 Federal Entities	13.8	13.2	13.4	13.2	13.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	11.1
9 Investor Owned Utilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 Total Regional Contracts Out	13.8	13.2	13.4	13.2	13.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	11.1
Intra-Regional Contracts In															
11 Federal Entities	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4
12 Investor Owned Utilities	4.4	3.7	3.9	3.8	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
13 Total Regional Contracts In	13.8	13.2	13.4	13.2	13.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	11.1

Table 2.3.2
Bonneville Power Administration - Power Services: Intra-Regional Transfers
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Intra-Regional Transfers															
Contracts	8,036	10,052	9,175	9,284	8,621	6,762	4,064	4,064	7,700	8,392	8,960	3,887	3,887	7,175	100,058
1 BPA-P to AVWP Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 BPA-P to BPA-T Ops IntrlAgmt	4,077	3,775	3,775	3,926	3,775	3,926	1,963	1,963	3,775	3,926	3,926	1,963	1,963	3,775	46,506
3 BPA-P to PPL NSP RIn	1,843	2,117	1,360	1,240	1,206	840	998	998	2,205	1,720	2,746	1,144	1,144	1,560	21,122
4 BPA-P to PSE Ops UBkr Repl	0	2,800	2,800	2,912	2,800	0	0	0	0	0	0	0	0	0	11,312
5 Other Entities to BPA-P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 PPL to BPA-P NSP SOut	2,117	1,360	1,240	1,206	840	1,997	1,102	1,102	1,720	2,746	2,288	780	780	1,840	21,118
7 Total Intra-Regional Transfers	8,036	10,052	9,175	9,284	8,621	6,762	4,064	4,064	7,700	8,392	8,960	3,887	3,887	7,175	100,058
Intra-Regional Contracts Out															
8 Federal Entities	5,920	8,692	7,935	8,078	7,781	4,766	2,961	2,961	5,980	5,646	6,672	3,107	3,107	5,335	78,939
9 Investor Owned Utilities	2,117	1,360	1,240	1,206	840	1,997	1,102	1,102	1,720	2,746	2,288	780	780	1,840	21,118
10 Total Regional Contracts Out	8,036	10,052	9,175	9,284	8,621	6,762	4,064	4,064	7,700	8,392	8,960	3,887	3,887	7,175	100,058
Intra-Regional Contracts In															
11 Federal Entities	6,194	5,135	5,015	5,132	4,615	5,923	3,065	3,065	5,495	6,672	6,214	2,743	2,743	5,615	67,624
12 Investor Owned Utilities	1,843	4,917	4,160	4,152	4,006	840	998	998	2,205	1,720	2,746	1,144	1,144	1,560	32,434
13 Total Regional Contracts In	8,036	10,052	9,175	9,284	8,621	6,762	4,064	4,064	7,700	8,392	8,960	3,887	3,887	7,175	100,058

Table 2.3.2
Bonneville Power Administration - Power Services: Intra-Regional Transfers
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Intra-Regional Transfers															
Contracts	5,917	6,312	6,838	6,575	6,312	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	59,282
1 BPA-P to AVWP Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 BPA-P to BPA-T Ops IntrlAgmt	4,077	3,624	3,926	3,775	3,624	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	46,355
3 BPA-P to PPL NSP RIn	1,840	0	0	0	0	0	0	0	0	0	0	0	0	0	1,840
4 BPA-P to PSE Ops UBkr Repl	0	2,688	2,912	2,800	2,688	0	0	0	0	0	0	0	0	0	11,088
5 Other Entities to BPA-P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 PPL to BPA-P NSP SOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total Intra-Regional Transfers	5,917	6,312	6,838	6,575	6,312	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	59,282
Intra-Regional Contracts Out															
8 Federal Entities	5,917	6,312	6,838	6,575	6,312	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	59,282
9 Investor Owned Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Regional Contracts Out	5,917	6,312	6,838	6,575	6,312	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	59,282
Intra-Regional Contracts In															
11 Federal Entities	4,077	3,624	3,926	3,775	3,624	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	46,355
12 Investor Owned Utilities	1,840	2,688	2,912	2,800	2,688	0	0	0	0	0	0	0	0	0	12,928
13 Total Regional Contracts In	5,917	6,312	6,838	6,575	6,312	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	59,282

Table 2.3.3
Bonneville Power Administration - Power Services: Intra-Regional Transfers
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Intra-Regional Transfers															
Contracts	6,074	6,101	5,803	4,928	4,285	5,321	2,912	2,912	6,654	6,703	6,777	2,928	3,391	5,978	70,770
1 BPA-P to AVWP Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 BPA-P to BPA-T Ops IntrlAgmt	2,944	3,029	3,246	3,095	2,793	3,086	1,434	1,434	3,246	2,869	3,095	1,434	1,661	3,020	36,389
3 BPA-P to PPL NSP RIn	1,445	1,685	1,380	1,170	656	829	703	703	1,550	1,858	1,976	791	915	1,518	17,179
4 BPA-P to PSE Ops UBkr Repl	0	7	7	7	7	0	0	0	0	0	0	0	0	0	28
5 Other Entities to BPA-P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 PPL to BPA-P NSP SOut	1,685	1,380	1,170	656	829	1,406	775	775	1,858	1,976	1,706	703	815	1,440	17,174
7 Total Intra-Regional Transfers	6,074	6,101	5,803	4,928	4,285	5,321	2,912	2,912	6,654	6,703	6,777	2,928	3,391	5,978	70,770
Intra-Regional Contracts Out															
8 Federal Entities	4,389	4,721	4,633	4,272	3,456	3,915	2,137	2,137	4,796	4,727	5,071	2,225	2,576	4,538	53,596
9 Investor Owned Utilities	1,685	1,380	1,170	656	829	1,406	775	775	1,858	1,976	1,706	703	815	1,440	17,174
10 Total Regional Contracts Out	6,074	6,101	5,803	4,928	4,285	5,321	2,912	2,912	6,654	6,703	6,777	2,928	3,391	5,978	70,770
Intra-Regional Contracts In															
11 Federal Entities	4,629	4,409	4,416	3,751	3,622	4,492	2,209	2,209	5,104	4,845	4,801	2,138	2,475	4,460	53,563
12 Investor Owned Utilities	1,445	1,692	1,387	1,177	663	829	703	703	1,550	1,858	1,976	791	915	1,518	17,207
13 Total Regional Contracts In	6,074	6,101	5,803	4,928	4,285	5,321	2,912	2,912	6,654	6,703	6,777	2,928	3,391	5,978	70,770

Table 2.3.3
Bonneville Power Administration - Power Services: Intra-Regional Transfers
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Intra-Regional Transfers															
Contracts	4,384	3,187	3,102	3,253	2,725	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	37,781
1 BPA-P to AVWP Setl WNP3 Del	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 BPA-P to BPA-T Ops IntrlAgmt	2,944	3,180	3,095	3,246	2,718	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	36,314
3 BPA-P to PPL NSP RIn	1,440	0	0	0	0	0	0	0	0	0	0	0	0	0	1,440
4 BPA-P to PSE Ops UBkr Repl	0	7	7	7	7	0	0	0	0	0	0	0	0	0	28
5 Other Entities to BPA-P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 PPL to BPA-P NSP SOut	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total Intra-Regional Transfers	4,384	3,187	3,102	3,253	2,725	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	37,781
Intra-Regional Contracts Out															
8 Federal Entities	4,384	3,187	3,102	3,253	2,725	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	37,781
9 Investor Owned Utilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Regional Contracts Out	4,384	3,187	3,102	3,253	2,725	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	37,781
Intra-Regional Contracts In															
11 Federal Entities	2,944	3,180	3,095	3,246	2,718	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	36,314
12 Investor Owned Utilities	1,440	7	7	7	7	0	0	0	0	0	0	0	0	0	1,468
13 Total Regional Contracts In	4,384	3,187	3,102	3,253	2,725	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	37,781

Table 2.4.1
Non-Federal CER Deliveries to BPA
Fiscal Year: 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Pacific Northwest															
1 CHPD to BPA CEAEA for Rock Island	18.6	18.5	17.9	18.6	18.4	17.9	18.5	18.5	17.9	18.5	18.6	18.5	17.3	18.5	18.3
2 CHPD to BPA CEAEA for Rocky Reach	38.3	38.1	36.9	38.3	37.9	37.0	38.1	38.1	36.9	38.1	38.3	38.1	35.8	38.1	37.7
3 DOPD to BPA CEAEA for Wells	23.8	23.7	22.9	23.8	23.6	23.0	23.7	23.7	22.9	23.7	23.8	23.7	22.2	23.7	23.4
4 GCPD to BPA CEAEA for Priest Rapids	29.0	28.8	28.0	29.0	28.7	28.0	28.9	28.9	28.0	28.9	29.0	28.9	27.1	28.9	28.6
5 GCPD to BPA CEAEA for Wanapum	29.0	28.8	28.0	29.0	28.7	28.0	28.9	28.9	28.0	28.9	29.0	28.9	27.1	28.9	28.6
6 Total Imports From PNW	139	138	134	139	137	134	138	138	134	138	139	138	129	138	137

Table 2.4.1
Non-Federal CER Deliveries to BPA
Fiscal Year: 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Pacific Northwest															
1 CHPD to BPA CEAEA for Rock Island	18.6	17.8	18.6	17.9	18.3	18.6	18.5	18.5	17.9	18.5	18.6	17.1	18.7	18.5	18.3
2 CHPD to BPA CEAEA for Rocky Reach	38.3	36.6	38.3	36.9	37.7	38.4	38.1	38.1	36.9	38.1	38.3	35.2	38.5	38.1	37.7
3 DOPD to BPA CEAEA for Wells	23.8	22.7	23.8	22.9	23.4	23.8	23.7	23.7	22.9	23.7	23.8	21.9	23.9	23.7	23.4
4 GCPD to BPA CEAEA for Priest Rapids	29.0	27.7	29.0	28.0	28.6	29.1	28.9	28.9	28.0	28.9	29.0	26.7	29.2	28.9	28.6
5 GCPD to BPA CEAEA for Wanapum	29.0	27.7	29.0	28.0	28.6	29.1	28.9	28.9	28.0	28.9	29.0	26.7	29.2	28.9	28.6
6 Total Imports From PNW	139	133	139	134	137	139	138	138	134	138	139	127	139	138	137

Table 2.4.2
Non-Federal CER Deliveries to BPA
Fiscal Year: 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
1 CHPD to BPA CEAEA for Rock Island	13,824	12,800	12,800	13,312	12,800	13,312	6,656	6,656	12,800	13,312	13,312	6,656	6,656	12,800	157,696
2 CHPD to BPA CEAEA for Rocky Reach	28,512	26,400	26,400	27,456	26,400	27,456	13,728	13,728	26,400	27,456	27,456	13,728	13,728	26,400	325,248
3 DOPD to BPA CEAEA for Wells	17,712	16,400	16,400	17,056	16,400	17,056	8,528	8,528	16,400	17,056	17,056	8,528	8,528	16,400	202,048
4 GCPD to BPA CEAEA for Priest Rapids	21,600	20,000	20,000	20,800	20,000	20,800	10,400	10,400	20,000	20,800	20,800	10,400	10,400	20,000	246,400
5 GCPD to BPA CEAEA for Wanapum	21,600	20,000	20,000	20,800	20,000	20,800	10,400	10,400	20,000	20,800	20,800	10,400	10,400	20,000	246,400
6 Total Imports From PNW	103,248	95,600	95,600	99,424	95,600	99,424	49,712	49,712	95,600	99,424	99,424	49,712	49,712	95,600	1,177,792

Table 2.4.2
Non-Federal CER Deliveries to BPA
Fiscal Year: 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
1 CHPD to BPA CEAEA for Rock Island	13,824	12,288	13,312	12,800	12,288	13,824	6,656	6,656	12,800	13,312	13,312	6,144	7,168	12,800	157,184
2 CHPD to BPA CEAEA for Rocky Reach	28,512	25,344	27,456	26,400	25,344	28,512	13,728	13,728	26,400	27,456	27,456	12,672	14,784	26,400	324,192
3 DOPD to BPA CEAEA for Wells	17,712	15,744	17,056	16,400	15,744	17,712	8,528	8,528	16,400	17,056	17,056	7,872	9,184	16,400	201,392
4 GCPD to BPA CEAEA for Priest Rapids	21,600	19,200	20,800	20,000	19,200	21,600	10,400	10,400	20,000	20,800	20,800	9,600	11,200	20,000	245,600
5 GCPD to BPA CEAEA for Wanapum	21,600	19,200	20,800	20,000	19,200	21,600	10,400	10,400	20,000	20,800	20,800	9,600	11,200	20,000	245,600
6 Total Imports From PNW	103,248	91,776	99,424	95,600	91,776	103,248	49,712	49,712	95,600	99,424	99,424	45,888	53,536	95,600	1,173,968

Table 2.4.3
Non-Federal CER Deliveries to BPA
Fiscal Year: 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
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	1,056	1,056	1,056	0	0	0	0	1,056	0	1,056	0	0	1,056	6,337
3 DOPD to BPA CEAEA for Wells	0	656	656	656	0	0	0	0	656	0	656	0	0	656	3,936
4 GCPD to BPA CEAEA for Priest Rapids	0	800	800	800	0	0	0	0	800	0	800	0	0	800	4,800
5 GCPD to BPA CEAEA for Wanapum	0	800	800	800	0	0	0	0	800	0	800	0	0	800	4,800
6 Total Imports From PNW	0	3,824	3,824	3,824	0	0	0	0	3,824	0	3,824	0	0	3,824	22,945

Table 2.4.3
Non-Federal CER Deliveries to BPA
Fiscal Year: 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Pacific Northwest															
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	1,056	1,056	1,056	0	0	0	0	1,056	0	1,056	0	0	1,056	6,337
3 DOPD to BPA CEAEA for Wells	0	656	656	656	0	0	0	0	656	0	656	0	0	656	3,936
4 GCPD to BPA CEAEA for Priest Rapids	0	800	800	800	0	0	0	0	800	0	800	0	0	800	4,800
5 GCPD to BPA CEAEA for Wanapum	0	800	800	800	0	0	0	0	800	0	800	0	0	800	4,800
6 Total Imports From PNW	0	3,824	3,824	3,824	0	0	0	0	3,824	0	3,824	0	0	3,824	22,945

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3.	HYDRO RESOURCE FORECASTS FOR FY 2020 AND FY 2021.....	37
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Table 3.1.1
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Regulated Hydro															
1 Albeni Falls Hydroelectric	36	17	16	17	13	12	15	17	28	35	33	24	21	23	22
2 Bonneville	412	538	539	460	458	472	309	136	237	433	198	175	138	437	379
3 Chief Joseph	934	1,290	1,249	984	893	858	847	870	1,202	1,689	1,270	1,421	1,217	939	1,124
4 Dworshak	61	61	61	61	60	60	61	62	67	170	440	439	343	180	140
5 Grand Coulee	1,652	2,299	2,180	1,704	1,572	1,492	1,424	1,440	2,059	3,024	2,261	2,516	2,122	1,637	1,969
6 Hungry Horse	79	84	84	86	85	83	63	26	43	58	110	110	109	108	81
7 Ice Harbor	90	108	113	115	123	180	67	66	65	65	147	106	87	107	106
8 John Day	662	918	894	738	728	782	430	383	380	796	696	680	580	702	694
9 Libby	93	257	173	86	86	85	85	85	483	261	198	200	200	198	184
10 Little Goose	94	111	113	119	111	176	82	80	213	139	149	111	93	112	127
11 Lower Granite	100	110	112	117	110	175	82	80	112	80	91	80	80	115	107
12 Lower Monumental	97	112	117	120	130	190	85	88	303	215	99	85	85	111	139
13 McNary	449	592	576	480	473	487	268	272	1,050	299	302	297	271	481	413
14 The Dalles	525	717	726	601	598	613	308	308	303	631	503	489	416	563	545
Total Regulated Hydro															
15 Federal Idle Capacity Adjustment															
16 Total Regulated Hydro	5,284	7,213	6,952	5,689	5,441	5,665	4,127	3,912	5,763	7,894	6,498	6,732	5,760	5,712	6,032

Table 3.1.1
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Regulated Hydro															
1 Albeni Falls Hydroelectric	36	17	16	17	13	12	15	17	35	44	37	24	21	23	24
2 Bonneville	412	538	539	460	458	472	309	136	237	433	198	175	138	437	379
3 Chief Joseph	934	1,290	1,249	984	893	858	847	870	1,202	1,689	1,270	1,421	1,217	939	1,125
4 Dworshak	61	61	61	61	60	60	61	62	67	170	427	425	343	180	138
5 Grand Coulee	1,652	2,299	2,180	1,704	1,572	1,492	1,424	1,440	2,059	3,024	2,261	2,516	2,122	1,637	1,971
6 Hungry Horse	79	84	84	86	85	83	63	26	43	58	110	110	109	108	81
7 Ice Harbor	90	108	113	115	123	180	67	66	65	65	147	106	87	107	106
8 John Day	662	918	894	738	728	782	430	383	380	796	696	680	580	702	694
9 Libby	93	257	173	86	86	85	85	85	483	261	198	200	200	198	184
10 Little Goose	94	111	113	119	111	176	82	80	213	137	149	111	93	112	127
11 Lower Granite	100	110	112	117	110	175	82	80	112	80	91	80	80	115	107
12 Lower Monumental	97	112	117	120	130	190	85	88	303	215	99	85	85	111	139
13 McNary	449	592	576	480	473	487	268	272	1,050	299	302	297	271	481	413
14 The Dalles	525	717	726	601	598	613	308	308	303	631	503	489	416	563	545
Total Regulated Hydro															
15 Federal Idle Capacity Adjustment															
16 Total Regulated Hydro	5,284	7,213	6,952	5,689	5,441	5,665	4,127	3,912	5,770	7,901	6,488	6,719	5,760	5,712	6,033

Table 3.1.2
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Regulated Hydro															
1 Albeni Falls Hydroelectric	15,197	6,596	6,535	7,295	5,022	5,096	3,067	3,596	11,522	14,275	14,126	4,966	4,569	9,140	111,001
2 Bonneville	175,685	210,878	217,199	196,061	182,239	199,685	76,502	36,841	117,386	183,099	84,005	35,741	28,832	170,182	1,914,334
3 Chief Joseph	508,542	648,955	644,006	493,307	422,196	447,086	200,343	215,839	623,924	843,229	764,390	405,255	351,704	489,866	7,058,642
4 Dworshak	26,101	24,089	24,716	25,679	23,991	25,601	12,454	12,677	27,468	69,913	187,170	90,338	75,229	70,936	696,363
5 Grand Coulee	899,773	1,156,046	1,123,918	854,081	743,307	777,226	337,054	357,109	1,068,794	1,509,845	1,361,332	717,456	612,991	853,968	12,372,899
6 Hungry Horse	33,658	33,118	34,421	36,456	33,904	35,358	13,046	5,322	17,582	24,021	46,837	22,560	23,912	42,525	402,720
7 Ice Harbor	42,045	47,397	64,778	67,113	66,852	92,125	15,012	13,874	27,669	26,732	65,610	22,384	19,602	47,393	618,587
8 John Day	323,043	417,541	400,658	362,050	332,938	380,105	102,450	80,789	178,841	364,147	346,018	167,140	143,688	323,364	3,922,773
9 Libby	39,487	101,679	70,376	36,712	34,120	36,149	17,409	17,398	196,584	107,119	84,253	41,254	43,867	78,088	904,495
10 Little Goose	43,738	48,726	64,795	69,534	60,450	89,991	18,346	16,822	91,162	56,764	66,279	23,504	20,844	49,769	720,724
11 Lower Granite	46,863	48,230	64,309	68,559	59,946	89,271	18,384	16,960	48,045	32,870	40,654	17,021	18,082	51,089	620,283
12 Lower Monumental	45,156	49,366	67,244	70,167	70,328	96,901	19,047	18,546	129,627	87,990	44,190	17,922	19,051	49,408	784,943
13 McNary	219,422	269,364	257,998	235,633	216,537	236,558	63,786	57,284	1,050	136,879	150,223	72,877	67,268	221,658	2,330,812
14 The Dalles	256,531	326,089	325,490	294,958	273,581	297,732	73,498	64,829	142,587	288,751	250,144	120,104	103,085	259,521	3,076,898
Total Regulated Hydro															
15 Federal Idle Capacity Adjustment															
16 Total Regulated Hydro	2,675,243	3,388,074	3,366,442	2,817,606	2,525,411	2,808,882	970,398	917,885	2,806,515	3,745,633	3,505,231	1,758,521	1,532,723	2,716,908	35,535,474

Table 3.1.2
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Regulated Hydro															
1 Albeni Falls Hydroelectric	15,197	6,596	6,535	7,307	4,849	5,096	3,067	3,596	15,082	17,241	15,023	4,966	4,569	9,140	118,264
2 Bonneville	174,722	210,546	218,440	195,719	175,800	200,497	72,020	36,119	107,930	174,223	79,794	35,500	29,246	169,852	1,880,409
3 Chief Joseph	502,629	644,812	638,794	494,251	394,471	439,007	198,429	213,904	653,302	855,533	745,681	402,837	349,497	486,156	7,019,303
4 Dworshak	26,101	24,089	24,716	25,722	23,164	25,601	12,454	12,677	28,663	66,997	173,887	87,574	75,229	70,936	677,812
5 Grand Coulee	889,311	1,148,666	1,114,823	855,714	694,495	763,182	333,834	353,908	1,119,118	1,531,875	1,328,012	713,174	609,144	847,502	12,302,758
6 Hungry Horse	33,658	33,118	34,421	36,516	32,735	35,358	13,046	5,322	18,347	23,020	44,887	22,561	23,912	42,525	399,426
7 Ice Harbor	42,005	47,397	64,648	66,658	64,547	91,839	15,012	13,874	28,846	25,852	63,093	22,384	19,602	47,299	613,056
8 John Day	317,707	428,796	396,671	362,521	317,791	374,483	101,586	80,060	183,427	352,163	333,730	167,161	143,995	323,770	3,883,862
9 Libby	39,487	101,679	70,376	36,773	32,944	36,149	17,409	17,398	205,141	102,652	80,746	41,254	43,867	78,088	903,963
10 Little Goose	43,697	48,726	64,665	69,062	58,365	89,712	18,346	16,822	95,040	54,127	63,736	23,504	20,844	49,670	716,316
11 Lower Granite	46,819	48,230	64,180	68,094	57,878	88,995	18,384	16,960	50,089	31,787	39,063	17,021	18,082	50,988	616,570
12 Lower Monumental	45,114	49,366	67,109	69,691	67,903	96,600	19,047	18,546	135,142	85,092	42,495	17,922	19,051	49,310	782,388
13 McNary	215,798	276,625	255,431	235,939	206,685	233,059	63,248	56,767	1,050	132,375	144,888	72,886	67,411	221,937	2,311,588
14 The Dalles	252,294	334,878	322,252	295,341	261,134	293,328	72,878	64,245	146,242	279,248	241,261	120,120	103,305	259,847	3,046,372
Total Regulated Hydro															
15 Federal Idle Capacity Adjustment															
16 Total Regulated Hydro	2,644,539	3,403,523	3,343,062	2,819,308	2,392,763	2,772,905	958,759	910,198	2,914,906	3,732,185	3,396,296	1,748,864	1,527,755	2,707,021	35,272,085

Table 3.1.3
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Regulated Hydro															
1 Albeni Falls Hydroelectric	11,357	5,436	5,399	5,492	3,767	3,822	2,300	2,697	9,533	10,727	10,582	3,715	3,421	7,536	85,783
2 Bonneville	130,640	176,983	183,951	146,447	136,679	150,900	34,716	12,026	58,883	128,319	63,481	27,220	24,058	144,198	1,418,502
3 Chief Joseph	186,198	281,398	285,346	238,948	199,277	190,415	104,463	97,511	270,252	372,595	180,228	106,399	115,706	186,260	2,814,995
4 Dworshak	19,505	19,853	20,417	19,334	17,994	19,201	9,341	9,508	22,727	52,533	140,208	67,584	56,340	58,486	533,029
5 Grand Coulee	329,443	501,281	497,985	413,700	350,841	331,023	175,747	161,334	462,947	667,150	320,975	188,367	201,666	324,701	4,927,159
6 Hungry Horse	25,152	27,295	28,435	27,448	25,428	26,519	9,784	3,992	14,547	18,050	35,085	16,878	17,908	35,062	311,581
7 Ice Harbor	24,935	30,289	18,931	18,282	18,880	41,887	9,209	9,767	20,453	20,273	43,958	15,621	13,814	29,382	315,681
8 John Day	169,294	244,268	264,595	187,101	173,641	201,092	52,273	57,216	104,139	209,007	171,733	77,764	78,910	181,948	2,172,981
9 Libby	29,508	83,799	58,136	27,641	25,590	27,111	13,057	13,049	162,655	80,490	63,114	30,863	32,852	64,383	712,248
10 Little Goose	25,939	31,139	18,936	18,942	17,071	40,917	11,255	11,842	67,386	43,049	44,406	16,402	14,689	30,855	392,827
11 Lower Granite	27,792	30,821	18,794	18,676	16,929	40,590	11,278	11,939	35,514	24,927	27,237	11,878	12,743	31,674	320,794
12 Lower Monumental	26,780	31,547	19,652	19,114	19,861	44,059	11,685	13,055	95,819	66,729	29,607	12,507	13,426	30,631	434,472
13 McNary	114,991	157,582	170,382	121,771	112,933	125,150	32,545	40,569	1,050	78,563	74,558	33,907	36,942	124,721	1,297,590
14 The Dalles	134,438	190,767	214,954	152,428	142,684	157,513	37,501	45,913	83,028	165,732	124,149	55,880	56,612	146,026	1,707,625
Total Regulated Hydro															
15 Federal Idle Capacity Adjustment															
16 Total Regulated Hydro	1,255,973	1,812,456	1,805,913	1,415,324	1,261,575	1,400,198	515,154	490,416	1,480,859	1,938,144	1,329,319	664,984	679,086	1,395,863	17,445,265

Table 3.1.3
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Regulated Hydro															
1 Albeni Falls Hydroelectric	11,357	5,436	5,399	5,480	3,637	3,822	2,300	2,697	11,330	14,269	12,395	3,715	3,421	7,536	92,793
2 Bonneville	131,603	177,315	182,710	146,789	132,121	150,088	39,199	12,748	68,339	137,195	67,691	27,461	23,644	144,528	1,441,431
3 Chief Joseph	192,111	285,540	290,557	238,005	205,571	198,494	106,377	99,446	240,875	360,292	198,937	108,818	117,913	189,969	2,832,904
4 Dworshak	19,505	19,853	20,417	19,291	17,373	19,201	9,341	9,508	21,531	55,448	143,469	65,513	56,340	58,486	535,276
5 Grand Coulee	339,905	508,661	507,079	412,066	361,924	345,067	178,967	164,534	412,623	645,120	354,294	192,649	205,512	331,168	4,959,570
6 Hungry Horse	25,152	27,295	28,435	27,387	24,551	26,519	9,784	3,992	13,782	19,052	37,035	16,877	17,908	35,062	312,829
7 Ice Harbor	24,975	30,289	19,061	18,738	18,229	42,173	9,209	9,767	19,276	21,153	46,475	15,621	13,814	29,476	318,255
8 John Day	174,630	233,014	268,581	186,630	171,320	206,714	53,137	57,945	99,554	220,990	184,021	77,742	78,603	181,542	2,194,423
9 Libby	29,508	83,799	58,136	27,580	24,708	27,111	13,057	13,049	154,099	84,957	66,621	30,862	32,852	64,383	710,721
10 Little Goose	25,981	31,139	19,066	19,414	16,483	41,196	11,255	11,842	63,507	44,289	46,949	16,402	14,689	30,954	393,164
11 Lower Granite	27,837	30,821	18,923	19,142	16,345	40,866	11,278	11,939	33,470	26,010	28,775	11,878	12,743	31,775	321,802
12 Lower Monumental	26,823	31,547	19,787	19,591	19,176	44,359	11,685	13,055	90,304	69,626	31,302	12,507	13,426	30,729	433,918
13 McNary	118,615	150,322	172,949	121,465	111,423	128,649	33,084	41,086	1,050	83,068	79,892	33,897	36,798	124,443	1,305,453
14 The Dalles	138,675	181,977	218,192	152,045	140,776	161,917	38,121	46,498	79,372	175,235	133,032	55,864	56,391	145,699	1,723,797
Total Regulated Hydro															
15 Federal Idle Capacity Adjustment															
16 Total Regulated Hydro	1,286,676	1,797,008	1,829,294	1,413,622	1,263,637	1,436,176	526,793	498,103	1,377,825	1,956,703	1,430,889	669,807	684,054	1,405,750	17,576,337

Table 3.1.4
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/11/2018
S158-RC-20180906-130400

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1Hr-MW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep
Regulated Hydro														
1 Albeni Falls Hydroelectric	37	21	20	22	23	23	25	30	28	36	33	39	39	37
2 Bonneville	955	960	923	980	963	955	950	950	939	758	933	905	905	929
3 Chief Joseph	2,146	2,261	2,263	2,221	2,273	2,141	2,223	2,223	2,306	2,318	2,318	2,306	2,306	2,144
4 Dworshak	191	426	405	384	436	435	440	445	447	349	348	348	347	398
5 Grand Coulee	4,814	4,086	3,679	4,198	4,910	5,064	4,436	4,313	4,358	4,293	4,760	4,798	4,722	3,871
6 Hungry Horse	191	197	371	330	190	275	318	238	363	194	195	194	193	190
7 Ice Harbor	469	508	524	508	578	560	554	541	596	635	493	633	633	614
8 John Day	1,866	2,233	2,285	2,268	2,248	2,259	2,112	2,112	2,234	2,285	2,156	2,187	2,187	1,865
9 Libby	593	589	583	484	526	528	479	479	459	464	364	397	397	492
10 Little Goose	763	767	821	873	846	854	764	740	848	843	823	654	654	806
11 Lower Granite	775	770	780	806	846	857	776	756	867	756	750	633	633	767
12 Lower Monumental	701	763	868	878	878	853	808	831	860	780	708	650	650	705
13 McNary	952	979	1,033	1,062	1,061	1,055	1,035	1,035	1,050	988	1,053	1,045	1,045	991
14 The Dalles	1,578	1,607	1,725	1,697	1,858	1,860	1,844	1,844	1,827	1,752	1,808	1,780	1,780	1,652
Total Regulated Hydro														
15 Federal Idle Capacity Adjustment	-6,020	-3,580	-2,675	-4,783	-6,498	-6,341	-6,162	-8,753	-3,953	-1,631	-3,680	-3,390	-5,315	-4,823
16 Total Regulated Hydro	10,012	12,586	13,605	11,927	11,137	11,379	10,604	7,784	13,229	14,820	13,062	13,179	11,175	10,638

Table 3.1.4
Bonneville Power Administration - Power Services: Regulated Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/11/2018
S158-RC-20180906-130400

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1Hr-MW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep
Regulated Hydro														
1 Albeni Falls Hydroelectric	37	25	22	22	23	23	25	30	36	46	47	39	39	37
2 Bonneville	913	907	885	897	901	848	803	803	824	786	795	838	838	855
3 Chief Joseph	2,236	2,283	2,261	2,248	2,289	2,108	2,213	2,213	2,328	2,318	2,328	2,316	2,316	2,034
4 Dworshak	375	439	311	384	436	435	440	445	447	449	449	448	447	387
5 Grand Coulee	3,750	4,042	4,015	4,040	4,607	4,567	4,167	4,051	4,259	4,849	5,128	5,028	4,947	4,404
6 Hungry Horse	195	343	371	242	179	175	159	119	181	260	195	194	193	190
7 Ice Harbor	627	610	672	596	681	662	654	639	629	635	515	565	565	672
8 John Day	2,081	2,285	2,285	2,268	2,266	2,268	2,129	2,129	2,172	2,267	2,129	2,216	2,216	2,282
9 Libby	517	567	583	502	530	470	416	415	459	464	472	370	369	458
10 Little Goose	771	840	807	873	864	856	766	742	848	847	769	732	732	787
11 Lower Granite	735	740	857	796	856	857	776	756	867	756	778	580	580	718
12 Lower Monumental	701	771	870	878	878	853	808	831	860	775	751	645	645	690
13 McNary	930	979	973	1,045	981	1,009	1,026	1,026	1,050	981	971	935	935	983
14 The Dalles	1,656	1,725	1,784	1,880	1,752	1,717	1,747	1,747	1,799	1,762	1,744	1,722	1,722	1,821
Total Regulated Hydro														
15 Federal Idle Capacity Adjustment	-5,485	-3,528	-3,289	-4,558	-5,984	-5,595	-5,228	-7,323	-3,548	-2,247	-4,147	-3,337	-5,435	-5,557
16 Total Regulated Hydro	10,040	13,028	13,408	12,113	11,258	11,253	10,902	8,623	13,211	14,948	12,925	13,289	11,108	10,762

Table 3.2.1
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 3.2.1
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 3.2.2
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Independent Hydro															
1 Anderson Ranch	1,773	1,814	1,858	1,829	1,882	1,848	1,913	1,913	5,032	15,312	14,005	4,107	4,381	3,585	61,253
2 Big Cliff	4,685	5,190	2,578	1,608	2,336	2,430	1,810	3,023	7,978	8,137	2,940	1,215	1,215	4,018	49,162
3 Black Canyon	2,247	1,476	1,276	1,387	1,382	1,788	1,737	1,737	3,624	3,499	3,601	1,720	1,835	3,423	30,731
4 Boise River Diversion	295	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	2,953	4,150	1,229	1,229	2,518	2,328	2,418	985	1,051	2,260	30,313
6 Cougar	11,517	9,302	3,485	2,663	2,478	5,394	6,032	6,032	11,600	12,064	6,929	5,270	4,858	6,485	94,110
7 Cowlitz Falls	2,625	1,213	9,421	4,112	5,403	14,115	9,398	10,254	26,188	27,333	11,502	2,693	2,267	3,979	130,503
8 Detroit	31,848	32,881	14,650	4,755	12,573	14,952	12,575	23,131	46,014	47,827	22,544	8,876	9,406	30,450	312,482
9 Dexter	5,346	6,288	1,520	1,402	1,889	1,965	2,441	2,563	6,601	6,918	2,477	982	1,016	4,541	45,950
10 Foster	2,804	3,025	5,216	1,728	3,677	8,669	4,689	4,784	9,200	9,568	2,565	1,167	1,069	2,710	60,870
11 Green Peter	8,354	7,735	22,568	3,215	149	24,457	19,344	16,111	37,200	35,117	3,982	944	3,103	8,830	191,110
12 Green Springs	2,613	4,036	4,588	4,776	4,254	5,115	2,311	2,311	4,521	4,529	3,998	1,958	2,088	3,161	50,258
13 Hills Creek	9,831	10,749	1,946	1,597	1,838	2,161	5,766	6,511	14,000	14,560	5,776	1,641	1,490	10,508	88,372
14 Lookout Point	33,644	34,103	3,510	3,240	4,602	6,125	16,120	18,196	55,200	53,994	18,021	3,981	4,095	32,708	287,539
15 Lost Creek	16,004	7,600	7,505	7,694	5,201	5,651	3,043	3,258	22,560	23,462	19,293	9,206	8,144	9,507	148,128
16 Minidoka	2,682	992	988	992	1,126	986	2,097	2,097	10,493	9,332	9,127	3,882	4,141	4,759	53,695
17 Palisades	19,262	4,630	4,699	4,896	5,084	12,059	10,567	10,567	65,062	61,993	53,674	29,820	31,808	23,344	337,465
18 Roza	1,679	0	1,647	1,090	1,242	3,998	2,359	2,359	4,546	4,523	4,314	2,206	2,353	0	32,316
Total Independent Hydro															
19 Federal Entities	159,600	134,202	88,794	49,281	58,069	115,862	103,429	116,256	333,409	341,531	188,227	81,158	84,858	155,298	2,009,974
20 Total Independent Hydro	159,600	134,202	88,794	49,281	58,069	115,862	103,429	116,256	333,409	341,531	188,227	81,158	84,858	155,298	2,009,974

Table 3.2.2
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 3.2.3
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Independent Hydro															
1 Anderson Ranch	1,346	1,327	1,319	1,377	1,431	1,352	1,473	1,473	3,746	11,295	10,723	3,140	3,349	2,736	46,088
2 Big Cliff	3,383	4,165	2,217	1,268	1,729	1,910	1,323	2,209	6,861	5,946	2,318	888	1,028	3,214	38,459
3 Black Canyon	1,809	1,128	945	1,048	1,074	1,323	1,334	1,334	2,721	2,641	2,744	1,350	1,440	2,558	23,450
4 Boise River Diversion	250	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	2,247	3,134	952	952	1,926	1,848	2,115	670	714	1,763	23,283
6 Cougar	8,318	7,465	2,997	2,100	1,833	4,240	4,408	4,408	9,976	8,816	5,464	3,851	4,111	5,188	73,175
7 Cowlitz Falls	1,988	1,022	7,765	3,328	4,132	10,627	7,198	7,854	21,130	20,403	10,000	2,095	1,765	2,861	102,169
8 Detroit	0	0	0	3,751	0	0	0	0	32,777	17,510	0	0	0	0	54,039
9 Dexter	3,861	5,046	1,307	1,106	1,398	1,544	1,784	1,873	5,677	5,055	1,953	718	859	3,633	35,815
10 Foster	2,025	2,428	4,486	1,362	2,721	6,815	3,426	3,496	7,912	6,992	2,022	853	904	2,168	47,610
11 Green Peter	6,034	6,208	0	2,535	111	0	12,506	0	5,888	0	3,140	689	2,626	7,064	46,800
12 Green Springs	1,121	250	128	388	440	809	662	662	2,009	1,937	1,960	899	959	1,811	14,036
13 Hills Creek	7,100	8,626	1,673	1,259	1,360	1,698	4,213	4,758	12,040	10,640	4,554	1,199	1,261	8,406	68,788
14 Lookout Point	0	0	3,019	2,555	3,406	4,815	0	0	9,336	0	0	2,909	3,465	0	29,503
15 Lost Creek	11,559	6,099	6,454	6,067	3,849	4,442	2,224	2,381	19,402	17,146	15,212	6,727	6,891	7,605	116,057
16 Minidoka	2,142	735	736	732	660	736	1,622	1,622	7,780	7,019	6,982	2,944	3,140	3,490	40,340
17 Palisades	14,596	3,491	3,602	3,573	3,839	8,894	8,055	8,055	48,141	47,051	40,872	22,171	23,649	17,614	253,603
18 Roza	1,353	829	1,395	839	931	2,992	1,748	1,748	3,496	3,347	3,579	1,579	1,684	2,437	27,957
Total Independent Hydro															
19 Federal Entities	68,738	50,945	39,222	35,092	31,158	55,329	53,243	42,961	201,604	168,410	114,436	53,062	58,250	73,315	1,045,765
20 Total Independent Hydro	68,738	50,945	39,222	35,092	31,158	55,329	53,243	42,961	201,604	168,410	114,436	53,062	58,250	73,315	1,045,765

Table 3.2.3
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Independent Hydro															
1 Anderson Ranch	1,346	1,327	1,319	1,377	1,381	1,352	1,473	1,473	3,746	11,295	10,723	3,140	3,349	2,736	46,039
2 Big Cliff	3,383	4,373	2,114	1,330	1,682	1,816	1,323	2,209	6,861	5,946	2,318	981	934	3,214	38,485
3 Black Canyon	1,809	1,128	945	1,048	1,037	1,323	1,334	1,334	2,721	2,641	2,744	1,350	1,440	2,558	23,413
4 Boise River Diversion	250	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	7,837	2,858	2,202	1,784	4,033	4,408	4,408	9,976	8,816	5,464	4,256	3,737	5,188	73,285
7 Cowlitz Falls	1,988	1,022	7,765	3,328	3,990	10,627	7,198	7,854	21,130	20,403	10,000	2,095	1,765	2,861	102,026
8 Detroit	0	0	0	3,930	0	0	0	0	32,777	17,510	0	0	0	0	54,218
9 Dexter	3,861	5,298	1,247	1,160	1,360	1,469	1,784	1,873	5,677	5,055	1,953	793	781	3,633	35,944
10 Foster	2,025	2,549	4,277	1,429	2,647	6,481	3,426	3,496	7,912	6,992	2,022	943	822	2,168	47,189
11 Green Peter	6,034	6,517	0	2,659	108	0	12,506	0	5,888	0	3,140	762	2,387	7,064	47,064
12 Green Springs	1,121	250	128	388	425	809	662	662	2,009	1,937	1,960	899	959	1,811	14,021
13 Hills Creek	7,100	9,056	1,596	1,320	1,323	1,615	4,213	4,758	12,040	10,640	4,554	1,325	1,146	8,406	69,093
14 Lookout Point	0	0	2,878	2,679	3,314	4,579	0	0	9,336	0	0	3,215	3,150	0	29,151
15 Lost Creek	11,559	6,403	6,154	6,363	3,745	4,225	2,224	2,381	19,402	17,146	15,212	7,435	6,264	7,605	116,117
16 Minidoka	2,142	735	736	732	637	736	1,622	1,622	7,780	7,019	6,982	2,944	3,140	3,490	40,317
17 Palisades	14,596	3,491	3,602	3,573	3,706	8,894	8,055	8,055	48,141	47,051	40,872	22,171	23,649	17,614	253,470
18 Roza	1,353	829	1,395	839	898	2,992	1,748	1,748	3,496	3,347	3,579	1,579	1,684	2,437	27,925
Total Independent Hydro															
19 Federal Entities	68,738	52,941	38,191	36,161	30,206	54,083	53,243	42,961	201,604	168,410	114,436	54,940	56,328	73,315	1,045,556
20 Total Independent Hydro	68,738	52,941	38,191	36,161	30,206	54,083	53,243	42,961	201,604	168,410	114,436	54,940	56,328	73,315	1,045,556

Table 3.2.4
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 3.2.4
Bonneville Power Administration - Power Services: Independent Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 3.3.1
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Small Hydro															
1 Dworshak-Clearwater Hatchery	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.63
2 Rocky Brook	0.0	0.2	0.6	0.6	0.4	0.5	0.5	0.5	0.2	0.1	0.0	0.0	0.0	0	0.25
Total Small Hydro															
3 Federal Entities	2.7	2.8	3.2	3.2	3.0	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.88
4 Total Small Hydro	2.7	2.8	3.2	3.2	3.0	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.88

Table 3.3.1
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Small Hydro															
1 Dworshak-Clearwater Hatchery	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.63
2 Rocky Brook	0.0	0.2	0.6	0.6	0.4	0.5	0.5	0.5	0.2	0.1	0.0	0.0	0.0	0	0.25
Total Small Hydro															
3 Federal Entities	2.7	2.8	3.2	3.2	3.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.88
4 Total Small Hydro	2.7	2.8	3.2	3.2	3.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.88

Table 3.3.2
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Small Hydro															
1 Dworshak-Clearwater Hatchery	1,136	1,052	1,052	1,094	1,052	1,094	547	547	1,052	1,094	1,094	547	547	1,052	12,961
2 Rocky Brook	19	88	239	247	162	199	95	95	85	36	1	1	1	0	1,268
Total Small Hydro															
3 Federal Entities	1,155	1,140	1,291	1,341	1,214	1,293	642	642	1,137	1,130	1,095	548	548	1,052	14,229
4 Total Small Hydro	1,155	1,140	1,291	1,341	1,214	1,293	642	642	1,137	1,130	1,095	548	548	1,052	14,229

Table 3.3.2
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Small Hydro															
1 Dworshak-Clearwater Hatchery	1,136	1,010	1,094	1,052	1,010	1,136	547	547	1,052	1,094	1,094	505	589	1,052	12,919
2 Rocky Brook	19	88	239	247	162	199	95	95	85	36	1	1	1	0	1,268
Total Small Hydro															
3 Federal Entities	1,155	1,098	1,333	1,299	1,172	1,335	642	642	1,137	1,130	1,095	506	590	1,052	14,187
4 Total Small Hydro	1,155	1,098	1,333	1,299	1,172	1,335	642	642	1,137	1,130	1,095	506	590	1,052	14,187

Table 3.3.3
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Small Hydro															
1 Dworshak-Clearwater Hatchery	821	844	905	863	778	860	400	400	905	800	863	400	463	842	10,141
2 Rocky Brook	14	61	175	181	121	149	70	70	67	26	1	0	0	0	935
Total Small Hydro															
3 Federal Entities	835	905	1,080	1,044	899	1,009	470	470	972	826	864	400	463	842	11,076
4 Total Small Hydro	835	905	1,080	1,044	899	1,009	470	470	972	826	864	400	463	842	11,076

Table 3.3.3
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Small Hydro															
1 Dworshak-Clearwater Hatchery	821	886	863	905	757	818	400	400	905	800	863	442	421	842	10,120
2 Rocky Brook	14	61	175	181	121	149	70	70	67	26	1	0	0	0	935
Total Small Hydro															
3 Federal Entities	835	947	1,038	1,086	878	967	470	470	972	826	864	442	421	842	11,055
4 Total Small Hydro	835	947	1,038	1,086	878	967	470	470	972	826	864	442	421	842	11,055

Table 3.3.4
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1Hr-MW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep
Small Hydro														
1 Dworshak-Clearwater Hatchery	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2 Rocky Brook	1.1	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.1	0.2	0.5	0.5	0
Total Small Hydro														
3 Federal Entities	4.1	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.1	3.2	3.5	3.5	3.0
4 Total Small Hydro	4.1	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.1	3.2	3.5	3.5	3.0

Table 3.3.4
Bonneville Power Administration - Power Services: Small Hydro
Fiscal Year 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1Hr-MW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep
Small Hydro														
1 Dworshak-Clearwater Hatchery	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2 Rocky Brook	1.1	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.1	0.2	0.5	0.5	0
Total Small Hydro														
3 Federal Entities	4.1	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.1	3.2	3.5	3.5	3.0
4 Total Small Hydro	4.1	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.1	3.2	3.5	3.5	3.0

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4.	OTHER RESOURCE FORECASTS FOR FY 2020 AND FY 2021	63
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Table 4.1.1
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.1
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.2
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.2
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.3
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.3
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.4
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.1.4
Bonneville Power Administration - Power Services: Large Thermal Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1Hr-MW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep
Large Thermal Resources														
1 Columbia Generating Station	1,181	1,179	1,180	1,169	1,169	1,169	1,160	1,160	0	0	1,168	1,163	1,163	1,179
Total Large Thermal Resources														
3 Federal Entities	1,181	1,179	1,180	1,169	1,169	1,169	1,160	1,160	0	0	1,168	1,163	1,163	1,179
4 Total	1,181	1,179	1,180	1,169	1,169	1,169	1,160	1,160	0	0	1,168	1,163	1,163	1,179

Table 4.2.1
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.2.1
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.2.2
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Renewable Resources															
1 Ashland Solar Project	2	1	1	1	1	2	1	1	3	3	0	0	0	0	17
2 Condon Wind	3,594	4,119	3,700	2,037	3,751	4,396	3,867	3,259	6,680	6,551	6,398	1,535	2,623	4,803	57,312
3 Foote Creek 1 Wind	1,105	1,267	1,138	627	1,154	1,352	1,190	1,003	2,055	2,015	1,968	472	807	1,477	17,629
4 Foote Creek 4 Wind	1,212	1,390	1,248	687	1,266	1,483	1,305	1,100	2,253	2,210	2,159	518	885	1,620	19,335
5 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Klondike Wind 1	1,732	1,985	1,783	982	1,808	2,118	1,864	1,571	3,219	3,157	3,083	740	1,264	2,315	27,621
7 Klondike Wind 3	3,614	4,143	3,721	2,049	3,772	4,421	3,890	3,278	6,718	6,589	6,435	1,544	2,638	4,830	57,643
8 Stateline Wind	6,501	7,451	6,693	3,685	6,785	7,953	6,996	5,896	12,084	11,852	11,575	2,777	4,744	8,688	103,681
Total Renewable Resources															
9 Federal Entities	17,761	20,356	18,284	10,067	18,537	21,725	19,112	16,108	33,012	32,378	31,618	7,586	12,960	23,733	283,238
10 Total	17,761	20,356	18,284	10,067	18,537	21,725	19,112	16,108	33,012	32,378	31,618	7,586	12,960	23,733	283,238

Table 4.2.2
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Renewable Resources															
1 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Condon Wind	3,594	4,119	3,700	2,037	3,621	4,396	3,867	3,259	6,680	6,551	6,398	1,535	2,623	4,803	57,183
3 Foote Creek 1 Wind	1,105	1,267	1,138	627	1,114	1,352	1,190	1,003	2,055	2,015	1,968	472	807	1,477	17,589
4 Foote Creek 4 Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Klondike Wind 1	1,732	1,985	1,783	982	1,745	2,118	1,864	1,571	3,219	3,157	3,083	740	1,264	2,315	27,558
7 Klondike Wind 3	3,614	4,143	3,721	2,049	3,642	4,421	3,890	3,278	6,718	6,589	6,435	1,544	2,638	4,830	57,513
8 Stateline Wind	6,501	7,451	6,693	3,685	6,551	7,953	6,996	5,896	12,084	11,852	11,575	2,777	4,744	8,688	103,447
Total Renewable Resources															
9 Federal Entities	16,547	18,965	17,034	9,379	16,674	20,240	17,806	15,007	30,756	30,165	29,459	7,068	12,075	22,113	263,291
10 Total	16,547	18,965	17,034	9,379	16,674	20,240	17,806	15,007	30,756	30,165	29,459	7,068	12,075	22,113	263,291

Table 4.2.3
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

Table 4.2.3
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Renewable Resources															
1 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Condon Wind	3,086	5,158	3,597	1,865	2,210	3,017	2,557	2,146	5,270	4,882	5,151	1,350	1,995	3,242	45,527
3 Foote Creek 1 Wind	949	1,586	1,107	574	680	928	786	660	1,621	1,502	1,584	415	614	997	14,004
4 Foote Creek 4 Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Klondike Wind 1	1,487	2,486	1,734	899	1,065	1,454	1,232	1,034	2,540	2,353	2,482	651	961	1,563	21,941
7 Klondike Wind 3	3,104	5,188	3,618	1,876	2,223	3,035	2,571	2,158	5,300	4,910	5,181	1,358	2,006	3,261	45,789
8 Stateline Wind	5,583	9,331	6,508	3,374	3,998	5,458	4,625	3,882	9,533	8,832	9,318	2,443	3,608	5,865	82,360
Total Renewable Resources															
9 Federal Entities	14,209	23,749	16,564	8,589	10,176	13,892	11,772	9,880	24,264	22,479	23,716	6,218	9,184	14,927	209,620
10 Total	14,209	23,749	16,564	8,589	10,176	13,892	11,772	9,880	24,264	22,479	23,716	6,218	9,184	14,927	209,620

Table 4.2.4
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1Hr-MW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep
Renewable Resources														
1 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Condon Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Foote Creek 1 Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Foote Creek 4 Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Klondike Wind 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Klondike Wind 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Stateline Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Renewable Resources														
9 Federal Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4.2.4
Bonneville Power Administration - Power Services: Renewable Resources
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

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

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5.	PNW REGIONAL HYDRO FORECASTS BY WATER YEAR.....	81
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Table 5.1.1
Regional Net Hydro By Water Year
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
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A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW		Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1	1929	10701	13011	12499	12458	11955	10963	10203	9608	11955	17868	11685	11781	10738	10028	12016
2	1930	10611	12131	11930	11756	12394	10836	10496	10321	12055	13641	13110	11849	10716	10014	11677
3	1931	10631	12113	12199	12015	12359	10954	9807	9270	11993	12759	12377	11874	10398	9792	11487
4	1932	10170	11602	12123	13323	9814	14534	16050	19736	21195	20684	16117	13378	11878	10820	14253
5	1933	10361	13268	15979	18344	17310	14766	13583	12423	17924	23387	20863	16801	14831	11579	16048
6	1934	12436	18321	22244	23368	21917	19379	20359	19374	18664	17492	12192	11035	10830	9446	17172
7	1935	10274	12741	14109	18060	17139	14792	10957	13065	17206	16482	16414	15116	11724	9813	14369
8	1936	10090	12275	12181	12295	11282	11251	10771	17083	21379	19921	14392	11317	10375	9490	13280
9	1937	10646	12177	12252	11360	9992	10225	9777	8758	12526	16879	13045	12212	10733	10168	11670
10	1938	10285	13262	14771	17016	15749	16507	16874	20376	21256	18295	16726	11779	10576	10452	15341
11	1939	10305	12448	12601	15374	14256	12751	12418	14903	16664	14878	13362	11217	10325	9726	13063
12	1940	10508	12764	14655	15629	13569	15498	14170	12621	17060	14482	10815	10607	9846	9792	13203
13	1941	10307	12568	13623	13183	12835	12073	9722	8169	11800	14367	12145	11750	10298	10297	11928
14	1942	9992	13519	16936	16546	15531	10922	10657	12041	14266	20358	17715	13201	12310	11332	14262
15	1943	10325	12874	14159	18836	17401	16291	22138	21789	19068	22912	21237	14208	12055	10755	16566
16	1944	11039	12217	12594	13682	12278	10860	9428	8573	11013	13521	11302	11595	9980	9646	11493
17	1945	10041	11681	12132	12809	11916	10954	9290	8984	16361	20324	12358	11913	10511	10141	12419
18	1946	10779	12921	15062	16929	16194	14970	19056	21082	21545	19060	18352	14647	12895	11052	15889
19	1947	10453	14574	19757	20333	19371	17557	16539	15708	19959	19656	17205	13341	11879	10726	16523
20	1948	15611	16985	16908	20247	18228	14688	14895	18133	23114	23463	18513	16944	15223	11828	17682
21	1949	11195	13910	14265	16063	15569	16930	16926	19324	21565	18981	13008	11547	10135	9920	15024
22	1950	10790	12833	15117	20418	19570	18777	19745	17397	19663	23229	22506	17125	15210	11804	17448
23	1951	13165	18093	20770	22754	23418	20071	20584	19525	21325	19412	19869	15322	12064	11452	18658
24	1952	14836	15766	17414	19863	18770	15049	18852	21772	23125	20232	16924	13308	11672	9765	17040
25	1953	10886	12094	12211	15471	20481	13683	9992	11490	18758	23516	20283	14050	12708	11160	15200
26	1954	11113	14556	16448	19796	19792	16649	15645	14895	20638	21670	22193	18387	17246	15205	17592
27	1955	11400	15901	15848	14982	14397	10340	10966	9815	15986	23441	21857	16532	13492	11066	15050
28	1956	12329	17145	20115	22742	21036	19735	19411	22627	22940	23445	19539	15793	14416	11493	18880

Table 5.1.1
Regional Net Hydro By Water Year
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW		Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
29	1957	11870	13845	16804	17106	14866	16154	18673	15301	23659	23204	15190	13574	10794	10153	16003
30	1958	10416	12795	14342	18597	17952	14862	13670	16549	22168	21601	14556	13078	11187	10258	15387
31	1959	10912	15762	18902	21581	21161	16074	17819	15693	19366	21651	20344	16026	14947	16261	17838
32	1960	17283	18686	18344	18793	17467	15213	20701	18248	17406	20183	16300	14540	11774	10393	16882
33	1961	10700	14565	14736	18339	18441	17567	16737	13044	19471	21791	14816	13464	11187	10055	15626
34	1962	10402	13026	14679	17928	17066	12118	14997	20698	19091	18857	14701	14020	12050	10547	14926
35	1963	11876	16070	18212	18747	18403	12689	11663	10508	17168	20813	15874	12953	11315	11375	15358
36	1964	10420	13736	14646	16502	15245	11617	14046	12349	19250	23953	21323	16391	14763	12843	15690
37	1965	12384	15025	20313	22926	23137	19632	14377	21381	21548	20462	17258	16110	14525	10924	18059
38	1966	11400	13892	15117	17571	16133	12864	15592	13658	16243	18651	15815	13635	11549	10370	14597
39	1967	10350	12810	16591	20657	19723	16949	14362	11045	19011	23024	19438	14699	13234	11274	16369
40	1968	11561	14610	15434	18915	19021	17738	10175	9648	15861	21107	16844	14932	14507	13901	15793
41	1969	13045	17120	17412	21494	21080	17011	19671	21421	22880	20918	17193	12935	11354	10602	17603
42	1970	11106	13627	13896	18580	18131	13641	10662	9972	18470	21710	14832	12636	10913	10018	14662
43	1971	10927	12790	14980	22023	22976	19767	19263	18844	22891	24003	21123	17105	15764	11855	18221
44	1972	11795	14460	16071	21867	21007	23906	22818	18022	22456	23689	21042	17328	16410	12381	18828
45	1973	11598	14183	15774	17491	16361	12189	9244	8206	12020	14958	12525	12151	10093	10056	13075
46	1974	10824	12992	17673	24580	23794	21556	20943	21177	21761	23902	22712	17571	16375	12007	19143
47	1975	10388	13111	14696	18349	17277	16524	12430	12611	20361	22856	22028	14963	14113	12398	16258
48	1976	13292	17658	21918	22003	21263	18109	19939	18526	22618	20916	20731	18889	18632	16557	19420
49	1977	11329	12895	12719	14122	12468	10824	8963	8275	11662	11722	10813	11488	10129	9294	11441
50	1978	9119	12209	15533	16994	15745	14216	19009	15013	19991	17445	17326	14366	12361	13485	15199
51	1979	11384	13595	13099	15401	13664	14876	10641	12339	18936	15486	12092	11248	10157	10245	13419
52	1980	10326	12447	12665	15981	14030	11347	13885	16072	22030	21186	15172	11350	10521	10716	14313
53	1981	10278	13913	18789	20516	19671	13019	9225	10921	18874	22264	18756	16086	14595	11197	16055
54	1982	10868	14540	15603	19365	21676	22241	19093	15250	21644	22625	22253	16333	15561	13495	18110
55	1983	12709	14806	16816	20813	20181	19625	16836	14315	19933	20376	20694	16393	15270	12090	17456
56	1984	11316	18179	17149	20591	18701	17743	15605	18268	18990	22422	19664	15348	12443	12193	17302

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A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW		Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
57	1985	11451	15190	15040	16391	15076	12904	15625	16389	18537	15504	12678	10494	9745	10560	14113
58	1986	11917	16071	15254	18917	19256	20960	19483	18649	18101	20069	13852	12729	10638	10246	16262
59	1987	10752	13976	15118	15180	13339	14334	11216	12517	18047	14692	11412	11029	9832	10218	13285
60	1988	10292	11663	11653	12307	12061	10957	9655	11527	12509	14835	13515	11840	10538	9866	11784
61	1989	10520	12948	13837	13460	10444	13932	14831	20341	18206	15909	13340	11732	10925	10177	13482
62	1990	10286	14290	16669	18353	18491	15546	14701	18383	17784	20361	16359	14664	13059	10335	15726
63	1991	10767	17879	17172	20119	19128	16172	15516	13995	18139	20287	20099	16293	13896	10393	16660
64	1992	9949	13104	12347	14385	13332	12237	9527	9977	15581	13036	10806	10993	9801	10090	12083
65	1993	9932	12195	12274	12662	9938	12608	11715	9887	20014	18014	14202	12720	11068	10171	12907
66	1994	10715	12417	12760	12381	13470	11087	9917	12982	14772	14041	12931	11481	10076	9896	12219
67	1995	10516	11699	13426	15544	16489	16532	12730	10027	18310	20936	16299	13325	11081	11011	14523
68	1996	12439	19480	23643	24167	23814	22556	19935	22301	21541	21457	19968	15850	14240	11393	19708
69	1997	10915	14599	17435	24094	23286	22394	20732	22274	23082	23462	21242	16352	15996	13861	19325
70	1998	16419	16756	15573	17373	18383	14788	11831	11375	21877	22520	16571	15224	13671	10461	16397
71	1999	11005	12500	17378	21698	19927	21004	16388	17656	19924	22891	21569	18414	16514	11972	17867
72	2000	10937	18359	18391	18180	17010	15614	18504	20471	18951	15115	15752	14109	11001	10114	15863
73	2001	10450	12367	12242	13179	11804	10885	9157	8369	12065	11989	11443	11547	9850	9354	11272
74	2002	8795	11788	13846	13688	12904	12170	13611	17400	17105	21496	18863	12860	11553	10147	14040
75	2003	10229	12575	12418	13599	13936	15400	12603	12829	14493	19882	12918	10411	9663	9900	13163
76	2004	10472	13173	14446	14364	12149	12265	11944	12108	15270	17215	13381	11132	11495	11819	13160
77	2005	11152	13703	15648	16708	16164	12254	9160	9736	15417	16401	13913	11877	10331	10388	13520
78	2006	10003	13267	14697	20006	18835	15291	19630	19713	21388	21751	14998	11912	10231	9900	15885
79	2007	9902	14367	15316	18056	15678	18376	15537	12834	18809	17876	15090	11721	9780	9408	14819
80	2008	10492	12652	13322	14383	13346	12667	11363	10233	19478	23446	18592	13167	11999	10448	14355

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A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW		Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1	1929	10703	13012	12499	12407	11905	10894	10139	9544	11949	17874	11676	11767	10738	10028	11995
2	1930	10613	12132	11930	11704	12312	10778	10457	10269	12058	13648	13097	11849	10716	9998	11654
3	1931	10634	12114	12198	11972	12318	10915	9791	9254	12000	12760	12363	11861	10398	9786	11472
4	1932	10172	11603	12123	13275	9775	14585	15949	19626	21205	20644	16117	13365	11867	10820	14250
5	1933	10363	13270	15951	18229	17293	14772	13670	12233	17837	23799	20573	16788	14818	11576	16029
6	1934	12438	18295	22335	23581	21861	19319	20158	19237	18945	17716	12179	11022	10831	9446	17200
7	1935	10276	12743	14108	17935	17107	14835	10852	12970	17087	16468	16413	15103	11724	9813	14333
8	1936	10092	12276	12181	12213	11200	11169	10700	17232	21470	19975	14378	11304	10375	9480	13279
9	1937	10648	12178	12251	11315	9940	10148	9695	8676	12504	16865	13035	12199	10733	10165	11649
10	1938	10288	13263	14771	16955	15746	16455	16753	20468	21234	18298	16726	11766	10576	10446	15327
11	1939	10308	12449	12601	15225	14306	12669	12421	14808	16632	14866	13351	11203	10325	9712	13034
12	1940	10511	12765	14655	15555	13487	15533	14087	12524	17027	14486	10815	10607	9846	9764	13180
13	1941	10309	12569	13622	13123	12766	11992	9673	8121	11767	14362	12131	11737	10298	10269	11897
14	1942	9994	13520	16954	16471	15449	10860	10582	11967	14190	20382	17729	13142	12267	11316	14227
15	1943	10327	12875	14159	18754	17357	16641	22001	21768	18982	23086	21245	14194	12042	10734	16581
16	1944	11041	12218	12594	13534	12331	10792	9375	8520	10990	13496	11303	11595	9980	9629	11467
17	1945	10043	11683	12132	12762	11834	10886	9244	8939	16291	20347	12355	11899	10511	10124	12394
18	1946	10781	12922	15062	16847	16121	15092	18909	21186	21881	19061	18352	14633	12895	11027	15910
19	1947	10455	14575	19920	20245	19514	17527	16326	15590	20168	19710	17207	13328	11879	10707	16537
20	1948	15613	16986	16862	20168	18146	14613	14958	18073	23425	23735	18511	16930	15209	11807	17704
21	1949	11198	13911	14264	16016	15488	17093	16968	19226	21711	19036	12999	11533	10135	9914	15039
22	1950	10793	12834	15117	20390	19938	18556	19552	17262	19632	23656	22264	17111	15197	11787	17446
23	1951	13167	18096	20768	22967	23564	20007	20415	19350	21405	19439	19776	15309	12064	11439	18654
24	1952	14838	15767	17371	19770	18701	14982	19029	21880	23451	20269	16907	13290	11654	9736	17050
25	1953	10888	12096	12211	15288	20585	13638	9910	11408	18619	23661	20285	14023	12682	11124	15163
26	1954	11115	14557	16440	19648	19786	16766	15473	14670	20997	22049	21829	18337	17222	15165	17590
27	1955	11402	15902	15830	14909	14326	10258	10906	9718	15885	23911	21589	16519	13479	11045	15030
28	1956	12331	17146	20146	22837	21110	19809	19171	22487	23402	23845	19526	15765	14388	11458	18947

Table 5.1.1
Regional Net Hydro By Water Year
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW		Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
29	1957	11872	13846	16762	17027	14779	16305	18582	15187	23768	23647	15183	13561	10794	10120	16036
30	1958	10419	12796	14342	18515	17859	14782	13587	16453	22301	21758	14517	13039	11162	10211	15367
31	1959	10914	15763	18952	21951	20846	15992	17698	15585	19720	22120	20222	16006	14928	16228	17878
32	1960	17307	18663	18309	18502	17653	15300	20439	18010	17338	20260	16304	14527	11761	10379	16852
33	1961	10702	14566	14735	18284	18348	17452	16680	12933	19768	22058	14811	13450	11187	10043	15635
34	1962	10404	13027	14679	17643	17261	12050	14823	20593	18977	18871	14699	14006	12050	10545	14884
35	1963	11878	16071	18190	18740	18315	12608	11581	10413	17012	20893	15874	12940	11315	11360	15318
36	1964	10422	13737	14646	16323	15278	11549	13942	12262	19175	24162	21010	16872	14750	12838	15668
37	1965	12386	15027	20408	23060	23346	19699	14154	21472	21903	20646	17287	16084	14513	10911	18126
38	1966	11402	13893	15117	17336	16241	12790	15497	13565	16177	18650	15814	13622	11549	10359	14561
39	1967	10352	12811	16569	20599	19765	16876	14215	10963	18949	23524	19337	14686	13220	11271	16367
40	1968	11563	14611	15434	18843	18932	17637	10169	9616	15791	21243	16840	14915	14504	13893	15765
41	1969	13047	17123	17368	21679	20735	17350	19605	21359	23252	21143	17204	12922	11354	10598	17653
42	1970	11108	13628	13895	18498	18040	13730	10501	9860	18314	21887	14834	12623	10900	10014	14635
43	1971	10929	12791	14980	22754	22506	20011	19098	18687	23348	24365	21215	17091	15751	11825	18314
44	1972	11797	14461	16071	21972	22264	23093	22489	17903	22817	24129	20903	17315	16397	12359	18892
45	1973	11600	14184	15775	17409	16279	12107	9188	8150	12003	14968	12512	12138	10093	10039	13038
46	1974	10826	12993	17730	24853	23821	21570	20803	21229	22053	24204	22372	17558	16362	11998	19177
47	1975	10390	13112	14696	18198	17306	16635	12210	12527	20252	22999	21963	14949	14100	12383	16236
48	1976	13323	17659	22007	22025	21331	18056	19968	18409	22956	21050	20437	19010	18552	16539	19439
49	1977	11331	12896	12719	13965	12523	10752	8948	8260	11623	11721	10813	11488	10129	9291	11419
50	1978	9121	12210	15587	16898	15755	14164	18882	14893	19912	17458	17328	14352	12348	13462	15172
51	1979	11386	13596	13099	15324	13590	14792	10678	12218	18867	15495	12085	11235	10157	10233	13389
52	1980	10329	12448	12665	15899	13948	11265	13816	16002	22075	21205	15169	11336	10521	10703	14291
53	1981	10281	13914	18755	20678	19703	12950	9283	10998	18758	22606	18674	16073	14582	11197	16068
54	1982	10871	14541	15602	19283	22026	22037	18874	15148	21722	22811	22005	16861	15547	13469	18110
55	1983	12711	14807	16802	20800	20351	19622	16777	14160	19910	20447	20586	16379	15223	12060	17440
56	1984	11318	18176	17131	20560	18709	17911	15559	18387	19057	22508	19676	15334	12420	12141	17320

Table 5.1.1
Regional Net Hydro By Water Year
Fiscal Year 2021
BP20 Initial Proposal Report Date: 9/19/2018
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A		B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW		Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
57	1985	11453	15192	15040	16222	15110	12822	15539	16374	18452	15512	12665	10479	9744	10510	14076
58	1986	11919	16074	15254	18835	19644	20792	19383	18531	18061	20008	13841	12716	10638	10207	16241
59	1987	10754	13978	15118	15101	13257	14252	11312	12458	18014	14692	11398	11016	9832	10208	13261
60	1988	10294	11664	11653	12228	11979	10875	9609	11479	12500	14839	13505	11821	10520	9846	11755
61	1989	10522	12949	13837	13454	10392	14067	14699	20187	18111	15905	13343	11710	10903	10151	13473
62	1990	10289	14291	16632	18232	18523	15501	14631	18280	17772	20699	16350	14632	13026	10312	15719
63	1991	10769	17882	17128	20260	19283	16227	15428	13837	18128	20397	19872	16717	13875	10383	16673
64	1992	9951	13105	12346	14371	13327	12234	9515	9965	15587	13034	10792	10979	9800	10086	12075
65	1993	9935	12196	12274	12650	9930	12549	11643	9848	20138	17859	14340	12693	11036	10140	12909
66	1994	10718	12418	12760	12358	13460	11080	9910	12976	14772	14034	12913	11473	10068	9879	12208
67	1995	10518	11701	13426	15527	16512	16482	12688	9939	18294	21061	16292	13293	11063	10980	14512
68	1996	12441	19445	23964	24393	24000	22486	19762	22297	21652	21593	19860	15816	14220	11363	19749
69	1997	10917	14600	17425	23961	23464	22277	20529	22363	23368	23859	21014	16862	15964	13842	19357
70	1998	16410	16757	15573	17308	18323	14708	11757	11302	22012	22594	16810	14631	13648	10432	16377
71	1999	11007	12501	17332	21778	21038	19975	16399	17412	19910	23086	21242	18707	16479	11946	17849
72	2000	10939	18358	18355	18114	17007	15548	18371	20395	18847	15099	15727	14078	10984	10093	15821
73	2001	10452	12369	12242	12951	12020	10859	9121	8333	12030	11950	11410	11517	9834	9336	11251
74	2002	8797	11789	13846	13653	12863	12121	13661	17232	17065	21826	18891	12839	11532	10142	14052
75	2003	10231	12576	12418	13581	13923	15378	12578	12702	14425	19941	12888	10380	9645	9875	13143
76	2004	10474	13174	14446	14340	12126	12240	11972	12030	15191	17205	13359	11104	11481	11801	13142
77	2005	11154	13704	15621	16683	16138	12230	9135	9743	15367	16348	13877	11840	10307	10369	13488
78	2006	10005	13268	14696	19867	18938	15242	19686	19766	21449	22123	14932	11854	10186	9865	15897
79	2007	9904	14369	15316	18014	15642	18299	15522	12775	18717	17861	15052	11688	9759	9386	14785
80	2008	10494	12653	13321	14347	13311	12633	11349	10192	19546	23993	18549	13154	11985	10437	14392

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul	Ag1	Ag2	Sep	Avg
1	1929	1,340	498	1,648	2,082	1,500	1,484	2,184	2,873	3,274	0	812	-123	0	179	1,277
2	1930	957	886	1,925	3,839	1,060	1,873	768	4,454	2,908	1,813	1	139	-46	-155	1,486
3	1931	695	292	1,952	3,238	927	14	2,219	3,201	2,256	1,310	-44	0	0	540	1,159
4	1932	734	334	1,622	1,458	-558	284	0	0	0	0	0	0	0	280	353
5	1933	1,270	718	0	0	0	0	0	892	0	0	0	0	0	197	220
6	1934	556	0	0	0	0	0	0	0	0	-475	75	309	-41	444	62
7	1935	949	1,328	1,259	0	0	0	391	2,542	59	549	0	0	0	1,028	552
8	1936	1,341	511	1,594	3,171	2,284	1,305	1,216	0	0	0	0	4	0	1,201	999
9	1937	1,196	79	1,417	3,155	2,857	1,867	2,007	2,879	2,654	-436	-71	-83	-261	-246	1,223
10	1938	783	551	972	66	0	0	0	0	0	0	0	149	-94	226	221
11	1939	1,235	739	1,797	628	307	737	445	0	356	721	-17	238	0	426	609
12	1940	861	615	405	891	354	0	0	2,774	0	1,282	1,365	903	88	-169	623
13	1941	965	96	1,294	2,042	440	297	2,131	3,201	2,473	673	0	0	0	235	936
14	1942	737	0	0	0	86	2,954	1,316	2,165	1,475	0	0	0	0	0	588
15	1943	905	1,442	1,271	0	0	0	0	0	0	0	0	0	0	785	368
16	1944	1,466	545	1,716	1,281	1,500	2,122	2,415	3,353	3,467	1,448	713	-46	0	716	1,487
17	1945	730	170	1,435	2,819	2,787	2,075	1,051	2,944	272	0	207	8	-211	-332	996
18	1946	817	271	919	365	0	0	0	0	0	0	0	0	0	312	226
19	1947	1,525	0	0	0	0	0	0	0	0	0	0	0	0	480	169
20	1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1949	963	144	693	0	0	0	0	0	0	0	50	164	-71	223	179
22	1950	1,136	924	174	0	0	0	0	712	0	0	0	0	0	47	220
23	1951	293	0	0	0	0	0	0	0	0	0	0	0	0	331	52
24	1952	0	0	0	0	0	0	0	0	0	0	0	0	0	1,289	106
25	1953	1,365	445	1,614	1,385	0	218	2,139	1,678	0	0	0	0	0	372	613
26	1954	1,034	0	0	0	0	0	0	0	0	0	0	0	0	0	88
27	1955	928	0	0	919	384	1,819	1,666	2,310	429	0	0	0	0	495	581
28	1956	779	0	0	0	0	0	0	0	0	0	0	0	0	279	89

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul	Ag1	Ag2	Sep	Avg
29	1957	814	215	0	0	455	0	0	0	0	0	0	-50	-121	882	187
30	1958	1,362	398	767	0	0	0	0	0	0	0	0	-141	0	746	269
31	1959	1,038	0	0	0	0	0	0	0	0	0	0	0	0	0	88
32	1960	0	0	0	0	0	0	0	0	177	0	-287	0	0	692	47
33	1961	1,057	0	405	0	0	0	0	524	0	0	-209	-212	0	801	185
34	1962	1,447	333	514	0	0	955	0	0	0	0	0	0	0	815	342
35	1963	493	0	0	0	0	766	982	2,040	0	0	0	0	0	124	241
36	1964	1,405	333	447	186	0	968	0	1,254	0	0	0	0	0	0	333
37	1965	193	0	0	0	0	0	0	0	0	0	0	0	0	600	66
38	1966	751	6	27	0	0	858	0	594	838	0	0	0	0	719	294
39	1967	1,335	627	0	0	0	0	0	1,896	0	0	0	0	0	119	253
40	1968	939	0	18	0	0	0	1,713	1,950	940	0	0	0	0	0	311
41	1969	15	0	0	0	0	0	0	0	0	0	-238	0	0	722	40
42	1970	919	27	1,052	0	0	189	1,577	1,881	0	0	0	-60	0	1,049	412
43	1971	1,296	428	309	0	0	0	0	0	0	0	0	0	0	65	177
44	1972	770	18	0	0	0	0	0	0	0	0	0	0	0	0	67
45	1973	808	0	292	0	0	736	2,496	3,066	3,161	684	101	2	25	-121	709
46	1974	848	679	0	0	0	0	0	0	0	0	0	0	0	0	128
47	1975	1,533	561	982	0	0	0	656	1,191	0	0	0	0	0	0	336
48	1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	1977	724	409	1,442	887	1,150	2,010	2,287	3,115	3,100	2,247	636	-298	-75	1,246	1,363
50	1978	991	-11	294	0	0	1,139	0	533	0	0	0	-13	0	0	226
51	1979	580	0	1,479	155	460	0	1,268	783	0	267	496	101	-30	81	381
52	1980	981	998	1,992	1,034	292	1,825	0	1,265	0	0	-227	110	-121	0	631
53	1981	994	204	0	0	0	672	1,721	3,979	0	0	0	0	0	126	403
54	1982	1,148	0	232	0	0	0	0	0	0	0	0	0	0	0	117
55	1983	113	0	0	0	0	0	0	110	0	0	0	0	0	0	14
56	1984	963	0	0	0	0	0	0	0	0	0	0	0	0	0	82

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul	Ag1	Ag2	Sep	Avg
57	1985	983	0	211	0	0	617	0	0	0	335	-56	875	65	96	223
58	1986	319	0	60	0	0	0	0	0	0	0	-32	0	-52	957	106
59	1987	1,527	0	51	566	1,127	-338	1,220	1,314	0	450	710	189	0	290	473
60	1988	1,074	1,060	2,204	3,729	1,160	1,828	1,540	3,836	2,706	1,191	-238	0	0	130	1,465
61	1989	763	46	886	2,688	2,095	80	0	0	0	-310	-698	37	0	286	480
62	1990	1,000	515	0	0	0	0	0	0	0	0	0	0	0	858	198
63	1991	1,459	0	0	0	0	0	0	232	0	0	0	0	0	722	193
64	1992	1,421	377	1,975	1,018	1,014	706	1,638	1,886	398	1,260	842	326	-195	47	906
65	1993	760	77	1,906	2,818	2,243	395	1,530	2,803	0	0	0	-148	0	188	865
66	1994	1,031	481	1,269	3,095	519	1,705	1,344	3,181	1,330	1,404	0	-17	0	46	1,100
67	1995	959	1,127	1,387	1,328	0	0	0	4,589	0	0	0	0	0	202	610
68	1996	97	0	0	0	0	0	0	0	0	0	0	0	0	243	28
69	1997	1,139	0	0	0	0	0	0	0	0	0	0	0	0	0	97
70	1998	0	0	189	0	0	0	1,150	1,991	0	0	0	0	0	903	219
71	1999	1,370	824	0	0	0	0	0	0	0	0	0	0	0	0	184
72	2000	1,131	0	0	0	0	0	0	0	0	692	0	-2	0	937	229
73	2001	1,248	471	1,616	1,312	1,456	1,846	2,474	3,258	2,818	2,395	420	-198	-155	1,233	1,456
74	2002	1,215	113	838	1,867	1,875	734	0	0	0	0	0	-172	-254	824	598
75	2003	1,066	149	1,534	1,885	481	0	26	702	1,489	0	0	697	0	688	672
76	2004	963	179	378	2,101	1,016	973	0	3,273	885	0	33	166	0	0	688
77	2005	675	0	0	0	0	300	2,077	2,283	570	0	0	0	0	1,064	398
78	2006	1,282	0	239	0	0	0	0	0	0	0	0	-143	-280	1,537	237
79	2007	1,415	0	126	0	0	0	0	888	0	0	-44	-58	-91	1,731	300
80	2008	1,059	0	950	1,106	611	365	578	2,342	0	0	0	0	0	778	527
81	Average	913	265	622	664	374	455	578	1,159	475	219	54	33	-24	395	443
82	Median	963	78	266	0	0	0	0	529	0	0	0	0	0	239	297

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul	Ag1	Ag2	Sep	Avg
1	1929	1,340	498	1,678	2,082	1,528	1,452	2,221	2,926	3,268	-29	930	-90	0	134	1,288
2	1930	960	817	1,925	3,839	1,060	1,873	768	4,467	2,895	1,836	8	142	-43	-149	1,483
3	1931	697	284	1,952	3,286	927	232	2,219	3,218	2,238	1,326	-44	0	0	549	1,182
4	1932	734	333	1,622	1,440	-525	151	0	0	0	0	0	0	0	280	343
5	1933	1,270	716	0	0	0	0	0	988	0	0	0	0	0	197	224
6	1934	556	0	0	0	0	0	0	0	0	-475	155	321	-63	444	68
7	1935	949	1,329	1,259	0	0	0	414	2,555	129	524	0	0	0	1,028	557
8	1936	1,341	511	1,594	3,174	2,333	1,305	1,205	0	0	0	0	17	0	1,207	1,004
9	1937	1,196	79	1,424	3,155	2,831	1,842	2,017	2,876	2,645	-442	-63	-60	-248	-202	1,225
10	1938	744	439	1,071	64	0	0	0	0	0	0	0	162	-96	227	217
11	1939	1,233	739	1,880	697	224	737	452	0	370	737	-16	252	0	426	619
12	1940	861	504	425	891	354	0	0	2,788	0	1,278	1,365	832	96	-25	625
13	1941	870	-49	1,209	2,042	433	399	2,141	3,201	2,469	667	0	0	0	235	916
14	1942	743	0	0	0	86	2,954	1,316	2,165	1,469	0	0	0	0	-599	539
15	1943	982	1,008	1,147	0	0	0	0	0	0	0	0	0	0	785	328
16	1944	1,466	544	1,716	1,385	1,418	2,123	2,417	3,353	3,466	1,439	712	-46	0	716	1,489
17	1945	597	81	1,435	2,813	2,794	2,060	1,051	2,944	265	0	211	30	-203	-201	988
18	1946	827	87	895	365	0	0	0	0	0	0	0	0	0	312	210
19	1947	1,525	0	0	0	0	0	0	0	0	0	0	0	0	480	169
20	1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	1949	963	144	693	0	0	0	0	0	0	0	93	173	-56	309	190
22	1950	1,092	824	244	0	0	0	0	739	0	0	0	0	0	47	215
23	1951	293	0	0	0	0	0	0	0	0	0	0	0	0	331	52
24	1952	0	0	0	0	0	0	0	0	0	0	0	0	0	1,283	105
25	1953	1,365	445	1,614	1,463	0	192	2,139	1,678	0	0	0	0	0	372	618
26	1954	1,034	0	0	0	0	0	0	0	0	0	0	0	0	0	88
27	1955	928	0	0	919	368	1,769	1,305	2,326	481	0	0	0	0	495	566
28	1956	779	0	0	0	0	0	0	0	0	0	0	0	0	279	89

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul	Ag1	Ag2	Sep	Avg
29	1957	814	215	0	0	458	0	0	0	0	0	0	-28	-46	882	191
30	1958	1,362	398	834	0	0	0	0	0	0	0	0	-57	0	746	278
31	1959	1,038	0	0	0	0	0	0	0	0	0	0	0	0	0	88
32	1960	0	0	0	0	0	0	0	0	194	0	-271	0	0	692	50
33	1961	1,057	0	405	0	0	0	0	584	0	0	-208	-213	0	806	188
34	1962	1,447	263	514	0	0	588	0	0	0	0	0	0	0	815	305
35	1963	493	0	0	0	0	765	982	2,053	71	0	0	0	0	124	248
36	1964	1,405	317	447	257	0	888	0	1,257	0	0	0	0	0	0	331
37	1965	193	0	0	0	0	0	0	0	0	0	0	0	0	600	66
38	1966	751	6	27	0	0	850	0	608	882	0	0	0	0	719	298
39	1967	1,335	565	0	0	0	0	0	1,892	0	0	0	0	0	119	247
40	1968	939	0	18	0	0	0	1,693	1,966	1,000	0	0	0	0	0	316
41	1969	15	0	0	0	0	0	0	0	0	0	-233	0	0	722	41
42	1970	919	27	1,052	0	0	101	1,639	1,924	0	0	0	-60	0	1,049	408
43	1971	1,296	428	309	0	0	0	0	0	0	0	0	0	0	65	177
44	1972	770	18	0	0	0	0	0	0	0	0	0	0	0	0	67
45	1973	808	0	290	0	0	724	2,525	3,108	3,156	674	180	14	32	-61	722
46	1974	788	616	0	0	0	0	0	0	0	0	0	0	0	0	118
47	1975	1,533	561	982	0	0	0	747	1,191	0	0	0	0	0	0	339
48	1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	1977	724	409	1,442	958	1,064	2,011	2,287	3,115	3,100	2,247	682	-140	-75	1,246	1,373
50	1978	969	-311	239	0	0	1,080	0	560	0	0	0	-15	0	0	191
51	1979	366	256	1,647	933	353	0	578	2,954	0	581	811	237	-42	-47	564
52	1980	907	842	1,846	1,034	292	1,874	0	1,265	0	0	-223	130	-115	0	605
53	1981	994	160	0	0	0	672	1,655	3,978	0	0	0	0	0	126	396
54	1982	1,148	0	232	0	0	0	0	0	0	0	0	0	0	0	117
55	1983	113	0	0	0	0	0	0	160	0	0	0	0	0	0	16
56	1984	963	0	0	0	0	0	0	0	0	0	0	0	0	0	82

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Ap1	Ap2	May	Jun	Jul	Ag1	Ag2	Sep	Avg
57	1985	983	0	211	0	0	617	0	0	0	299	44	857	72	111	230
58	1986	349	-93	60	0	0	0	0	0	0	0	-29	0	-51	957	101
59	1987	1,527	0	51	566	1,127	-337	1,120	1,367	0	450	778	261	0	351	485
60	1988	1,074	953	2,151	3,661	1,160	1,828	1,540	3,836	2,699	1,182	-208	0	0	121	1,446
61	1989	763	-44	886	2,669	2,096	0	0	0	0	-317	-693	42	0	286	464
62	1990	1,000	514	0	0	0	0	0	0	0	0	0	0	0	858	198
63	1991	1,459	0	0	0	0	0	0	323	0	0	0	0	0	722	197
64	1992	1,421	255	2,009	1,018	1,014	706	1,631	1,920	378	1,260	855	315	-188	164	909
65	1993	743	-28	1,794	2,779	2,243	391	1,529	2,769	0	0	0	-130	0	214	843
66	1994	1,031	355	1,298	3,095	519	1,725	1,344	3,181	1,324	1,400	0	-10	0	198	1,106
67	1995	955	1,022	1,308	1,328	0	0	0	4,608	0	0	0	0	0	202	595
68	1996	97	0	0	0	0	0	0	0	0	0	0	0	0	243	28
69	1997	1,139	0	0	0	0	0	0	0	0	0	0	0	0	0	97
70	1998	0	0	189	0	0	0	1,150	1,991	0	0	0	0	0	903	219
71	1999	1,370	767	0	0	0	0	0	0	0	0	0	0	0	0	179
72	2000	1,131	0	0	0	0	0	0	0	0	695	0	-3	0	937	229
73	2001	1,248	471	1,616	1,455	1,324	1,855	2,474	3,258	2,810	2,387	465	-96	-153	1,233	1,465
74	2002	1,103	-25	877	1,863	1,875	761	0	0	0	0	0	-129	-48	824	593
75	2003	1,066	149	1,529	1,885	481	0	4	749	1,504	0	0	578	0	712	671
76	2004	968	-10	337	2,101	1,016	974	0	3,324	941	0	39	186	0	0	678
77	2005	675	0	0	0	0	319	2,012	2,252	590	0	0	0	0	1,096	400
78	2006	1,282	0	239	0	0	0	0	0	0	0	0	-129	-269	1,537	238
79	2007	1,415	0	126	0	0	0	0	908	0	0	-44	-44	-85	1,731	301
80	2008	1,059	0	1,034	1,106	611	366	578	2,355	0	0	0	0	0	778	534
81	Average	904	230	622	679	368	448	564	1,196	479	221	66	41	-20	397	443
82	Median	963	12	242	0	0	0	0	572	0	0	0	0	0	261	299

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7.	FEDERAL TIER 1 SYSTEM FIRM CRITICAL OUTPUT	101
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Table 7.1.1
Federal Tier 1 System Firm Critical Output Projection - 2-Year Average
2020 RHWB Process for BP-20 Rate Period
S156-RC-20180716-160101

	A	B	C	D
1.	T1SFCO Projections Energy in aMW	2020	2021	Average
2.	Total Federal System Hydro Generation (<i>TRM Table 3.1</i>)	6,542	6,593	6,567
3.	Total Designated Non-Federally Owned Resources (<i>TRM Table 3.2</i>)	1,165	1,039	1,102
4.	Total Designated BPA Contract Purchases (<i>TRM Table 3.3</i>)	138	138	138
5.	Total Designated System Obligations (<i>TRM Table 3.4</i>)	-859	-843	-851
6.	Federal Tier 1 System Firm Critical Output (<i>sum of Lines 2-5</i>)	6,985	6,926	6,955

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

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

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

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

^{1/} Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.1, page 121.

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

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

^{1/} Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.2, page 122.

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

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

^{1/} Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.3, page 123.

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

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

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

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

^{1/} Reference Tiered Rate Methodology, November 2008. TRM-12-A-02, Table 3.4, page 124-125.

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8.	HYDRO REGULATION ASSUMPTIONS	113
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STUDY NUMBER: 18_RateCase20_Initial & 18_RateCase21_Initial

Requested By: BPA Rates Process

Due Date: October 12, 2018

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

Study Directories: **DOP Step:** X:\RATES\18_RateCase20_Initial\DOP20_RateCase
\Study_1

AER Step: X:\RATES\18_RateCase20_Initial\AER &
X:\RATES\18_RateCase21_Initial\AER

OPER Step: X:\RATES\18_RateCase20_Initial\OPER_final &
X:\RATES\18_RateCase21_Initial\OPER_final

Name of Regulator: Jennie Tran

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

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

DOP STEP

- This Step is used to determine the Canadian Treaty project elevations following procedures from the Columbia River Treaty.
- Since the official DOP studies for Treaty storage operations are typically completed just 1-2 months prior to the operating year, they are not available in time for the rate case study. Therefore, surrogate DOP studies are used to reflect expected study results and determine the Canadian Treaty storage operations for the AER step.
- The surrogate DOP studies start with the official Assured Operating Plans (AOP): AOP20 and AOP21 (identical to AOP20) studies. The surrogate DOP converts the AOP from perfect-knowledge to forecast-based and from operating-year to fiscal-year, and includes all the data updates that are expected to be included in the official DOP studies. These studies were run by BPA on January 9, 2018 for this BP-20 Initial Proposal Rate Case.
- These updates include plant data from the Pacific Northwest Coordination Agreement (PNCA) 2018 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 2018 operating year (OY18) 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 OY18 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 upcoming PNCA OY19 data submittal.
- **Plant Data** are from the PNCA OY18 data submittal and Cora Linn plant data from upcoming PNCA OY19 data submittal.
- **Loads** are from the FELCC OY18 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 OY18 data.
- **Initial Contents** for all projects came from the September 30, 1929, storage ending content from the final Rates study for 2007 (X:\RATES\06Rate07-09\04Rate_07\AER), except Mica, Arrow, and Duncan are initialized to the content from the surrogate DOP studies. (X:\RATES\18_RateCase20_RHWM\DOP20_RateCase\Study_1). The initial conditions do not significantly affect the study results since this is a continuous study.
- **Critical Rule Curves** (CRCs) are in accordance with PNCA OY18 adopted system critical rule curves.
- **Flood Control Rule Curves**, also known as Upper Rule Curves (URCs), are the highest contents allowed for each reservoir and supersede all other reservoir elevation and content operating objectives. The curves are based on: forecasts (not actuals); shifting some of Dworshak’s requirement to Grand Coulee when possible; a ratio of 3.6/4.08 Arrow/Mica split; and variable flood control (VarQ) at Hungry Horse and Libby. They were provided by the Corps of Engineers to BPA in March 2013 for 1929-2008. These flood control curves include the variable flood control in December at Libby, BC Hydro’s updated storage reservation diagram for Duncan, and a 1600 cubic feet per second (cfs) minimum flow at Dworshak. The Mica, Arrow, and Duncan flood control requirements are from the surrogate DOP20 study. The flood control data set was updated in November 2015 to reflect the new storage elevation table at Coulee. The flood control curves for Grand Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan to more closely reflect the methodology used in real-time operations.

- **Variable Energy Content Curves (VECCs)** are calculated using Power Discharge Requirements (PDRs), distribution factors, and forecast errors from the PNCA OY18 planning process. The Grand Coulee Energy Content Curve (ECC) lower limits are 1225 feet (441.5 ksfd) January through April, and 1240 feet (884.4 ksfd) in May. The unit 'ksfd' is a volume equal to 1000 cfs for 24 hours. The Canadian projects' surrogate DOP20 VECCs are based on forecasts, the ratio of 3.6/4.08 Arrow/Mica split, non-shifted flood control, and VarQ flood control at Hungry Horse.

Project Specific Data:

- **Mica, Duncan, and Arrow** are fixed to the 80-year surrogate DOP20 study.
- **Libby** operates to meet Coordinated System FELCC in October and November with a minimum flow of 4,000 cfs. Libby has a maximum outflow of 4,000 cfs January through April and 25,000 cfs May through August. The 25,000 cfs May through August maximum outflow is powerhouse hydraulic capacity without spill, but a higher outflow including spill can be provided to maintain the required VarQ flood control space. Libby has a minimum outflow of 6,000 cfs May 15 through September, and target outflows of 6,000 cfs in September and 4,000 cfs in October. Libby can be drafted to meet FELCC in October and November as long as it does not draft below the December Variable URC. When the December forecast at Libby for April through August is less than 5500 thousand acre feet (KAF), the flood control at Libby in December is 2426.7 feet (1805.8 ksfd). When the forecast is greater than 5900 KAF, the flood control in December is 2411.0 feet (1501.9 ksfd). The flood control data is interpolated between 1805.8 ksfd and 1501.9 ksfd 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 Libby 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 OY18 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.

Libby May1 Apr-Aug Forecast Volume (MAF)	Sturgeon Flow Volume Provided from Libby (KAF)
<4,800	0
4,800-5,400	800
5,400-6,350	800-1,120
6,350-7,400	1,120-1,200
7,400-8,500	1,200
8,500-8,900	1,200-1,600
>8,900	1,600

Libby May1 Apr-Aug Forecast Volume (MAF)	Bull Trout Minimum Flow May15-Aug31 (CFS)
<4,800	6,000
4,800-6,000	7,000
6,000-6,700	8,000
>6,700	9,000

In years when the May 1 forecast of April through August volume at The Dalles is less than 72.2 MAF (the lowest 20th percentile), the September 30 draft limit is 2439 feet (2061.3 ksf) and in years when the forecast is greater than or equal to 72.2 MAF, the September 30 draft limit is 2449 feet (2280.3 ksf). 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.

- **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 feet 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 feet on February 1, elevation 1742.4 feet on March 1, and 1739.32 feet on May 1. From June 1 through August 31, after the lake exceeds elevation 1739.32 feet at the Queens Bay gage, the lake shall be operated using the “allowable elevation” calculation to determine the Queens Bay maximum allowable elevation until the elevation at the Nelson gage drafts back to 1743.32 feet.
- **Hungry Horse** operates to meet the following minimum flow requirements at the project and at Columbia Falls as shown in the PNCA OY18 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.

Forecasted Apr-Aug Hungry Horse Streamflow volume (KAF)	Hungry Horse Minimum Flow (CFS)	Columbia Falls Minimum Flow (CFS)
<1,190	400	3,200
1,190-1,790	400-900	3,200-3,500
>1,790	900	3,500

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 (20th percentile from the COE’s PNCA OY18 data submittal), the project operates along a computed straight line between the June 30 content and a September 30 draft limit of 3540.0 feet (1275.1 ksf) to minimize occurrences of a second peak flow in the summer. In years when the May 1 April-August volume forecast for The Dalles is greater than or equal to 72.2 MAF (20th percentile), the September 30 draft limit is 3550.0 feet (1386.7 ksf). The summer draft is then shaped to provide flat flows July through September where possible. The maximum discharge at Hungry Horse is 9,000 cfs during September through April 15, and 11,956 cfs during April 16 through August 31, unless the URC causes more discharge.

- **Albeni Falls** targets 2062 feet (559.1 ksf) from June through August, 2060 feet (465.7 ksf) in September, 2056 feet (279.0 ksf) in October, 2051 feet (57.6 ksf) November through March, 2056 feet (279.0 ksf) in April, and 2060 feet (465.7 ksf) in May.
- **Kerr** targets 2891 feet (488.6 ksf) in October, 2889.6 feet (401.5 ksf) in November, 2888 feet (302.8 ksf) in December, 2886.4 feet (204.7 ksf) in January, 2886.6 feet (217.1 ksf) in February, 2885.4 feet (144.1 ksf) in March, 2883.0 feet (0.0 ksf) on April 15, 2884.3 feet (77.8 ksf) on April 30, 2890 feet (426.3 ksf) in May, full at 2893 feet (614.7 ksf) June through September.
- **Grand Coulee** operates to meet FELCC September through December subject to the draft limits of 1283 feet (2413.9 ksf) in September and October, 1275 feet (2102.4 ksf) in November, and 1270 feet (1915.1 ksf) in December. January through March, Grand Coulee can be drafted to the 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 13,000 cfs in October, and between 8000 to 13,000 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 1600 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 ksfd) on June 30 and 1535 feet (497.0 ksfd) 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 ksfd) on September 30 subject to a maximum outflow of 9867 cfs.
- **Lower Snake projects operate at MOP** (minimum operating pool) in accordance with the PNCA data submittal. As identified in the Federal Columbia River Power System BiOp, the Corps operates Lower Granite, Little Goose, Lower Monumental, and Ice Harbor within one foot of minimum operating pool (MOP) during the period from approximately April 3 through September 30. MOPs for Lower Granite, Little Goose, Lower Monumental and Ice Harbor are elevations 733 feet (224.9 ksfd), 633 feet (260.4 ksfd), 537 feet (180.4 ksfd) and 437 feet (193.4 ksfd), respectively. During the rest of the year Lower Granite, Little Goose, Lower Monumental and Ice Harbor operate at elevations 738 feet (245.7 ksfd), 638 feet (285.0 ksfd), 540 feet (190.1 ksfd) and 440 feet (204.8 ksfd), 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 OY18 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 OY18 PNCA Planning**

SPILL CRITERIA FOR OY18 (Feb 1, 2017 Submittal Appendix E)						
	Spill	Min Turb	Min Spill	Days	Hour Ending	Notes
LWG	20 kcfs; 18 kcfs	11.6 kcfs		Apr 3 - May 31; Jun 1 - Aug 31	All hours	Gas Cap: 40 kcfs
LGS	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
LMN	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.
IHR	45 kcfs day/gas cap night	9.5 kcfs	8.4 kcfs	Apr 3 - 28;	All hours (0500-1800: 13 hrs day/1800-0500: 11 hrs night)	Gas Cap: 97 kcfs
	30% vs 45kcfsday/ gas cap night			Apr 29 - Jul 12;	All hours (0500-1800: 13 hrs day/1800-0500: 11 hrs night)	
	45 kcfs day/gas cap night			Jul 13 - Aug 31	All hours (0500-1800: 13 hrs day/1800-0500: 11 hrs night)	
MCN	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	
JDA	30%	50 kcfs	25% of flow	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		
TDA	40% flow	50 kcfs		Apr 10 - Aug 31	All hours	Gas Cap: Ap1 : 124 kcfs; Ap2: 131 kcfs; May 132; Jun 137 kcfs; Jul 139 kcfs; Au1- Au2: 125 kcfs
BON	Min (100 kcfs, spill 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 85kcfs 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 ksfd) in November and 1270 feet (1915.1 ksfd) in December.
- **McNary Flow Targets** for April 10 through June 30 are 220,000 to 260,000 cfs based on The Dalles April 1, April-August volume runoff forecasts. When the forecast is 80 MAF or less the target is 220,000 cfs, and when the forecast is 92 MAF or greater the target is 260,000 cfs. Straight-line interpolation determines the flow targets for volume forecasts between 80 and 92 MAF. McNary summer flow targets are 200,000 cfs in July and August. Grand Coulee drafts for this flow augmentation target, subject to draft limits.
- **Lower Granite Flow Targets** also vary depending on the forecast. When April 1 Lower Granite 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 runoff 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 ksfd) from April through September. From October through March, John Day operates to 265 feet (190.4 ksfd).
- **Bonneville** second powerhouse corner collector is modeled as “other spill” in HYDSIM, using the “other spill” data from PNCA OY18.
- **Spill at non-Federal projects** is summarized below from PNCA OY18 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.

<u>Non-Federal Spill for Fish (Percent of Total Outflow or cfs)</u>							
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	9.0	9.0	9.0	2.8
Rock Island (%)	0.0	9.3	10.0	20.0	20.0	20.0	6.3
Wanapum (cfs)	1,700	21,700	21,700	21,700	21,700	21,700	12,700
Priest Rapids (cfs)	1,800	28,800	28,000	28,800	28,800	28,800	15,800
PROJECTS:	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wanapum (cfs)	3,700	3,700	2,700	800	800	1,200	1,458
Priest Rapids (cfs)	2,800	2,800	2,300	200	200	1,100	1,461

OPER STEP

- **All AER Step criteria apply in the OPER Step unless specifically amended below.**
- **Loads** in the OPER Step are the 2020 and 2021 Coordinated System firm residual hydro loads from BPA's LORA Study (Token S151-RC-20180306-100925) on March 6, 2018. 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 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.
- **Availability Factors** are used in HYDSIM to simulate unit outages and units held for reserve requirements. Unit outages are based on the latest information for all plants provided by BPA's Federal Hydro Projects Ops group. The availability factors are calculated using a combination of planned outages plus forced outages that are based on historical data and forecast equipment condition. The following tables show availability factors based on these outage assumptions for FY 2020 and FY 2021.

FY 2020:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	86%	97%	97%	81%	79%	83%	82%	97%	97%	79%	70%	97%
HGH	98%	98%	98%	77%	73%	49%	61%	73%	77%	68%	51%	89%
ALF	99%	84%	86%	99%	99%	99%	99%	76%	77%	65%	77%	72%
DWR	90%	75%	93%	89%	98%	98%	98%	98%	98%	98%	98%	79%
GCL	63%	63%	61%	61%	71%	73%	73%	71%	68%	73%	75%	57%
CHJ	70%	94%	94%	92%	93%	87%	93%	96%	96%	96%	96%	87%
LWG	65%	82%	83%	86%	88%	94%	94%	94%	94%	82%	79%	83%
LGS	81%	85%	83%	95%	60%	59%	60%	60%	60%	80%	66%	84%
LMN	35%	51%	38%	65%	70%	68%	70%	86%	86%	84%	70%	72%
IHR	59%	65%	67%	66%	75%	72%	74%	74%	74%	48%	68%	65%
MCN	84%	87%	92%	94%	94%	93%	93%	93%	89%	93%	93%	88%
JDA	54%	71%	91%	91%	90%	90%	84%	89%	91%	86%	87%	74%
TDA	71%	73%	83%	80%	77%	90%	85%	88%	84%	75%	71%	63%
BON	92%	93%	90%	92%	93%	92%	92%	91%	74%	90%	88%	90%

FY 2021:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	96%	96%	96%	78%	83%	79%	79%	96%	96%	87%	60%	85%
HGH	98%	98%	98%	98%	98%	48%	44%	48%	52%	48%	48%	48%
ALF	99%	99%	99%	99%	99%	99%	99%	99%	99%	92%	77%	73%
DWR	83%	40%	89%	86%	95%	95%	95%	95%	95%	95%	95%	75%
GCL	60%	60%	61%	67%	71%	72%	74%	80%	75%	69%	75%	65%
CHJ	90%	94%	94%	94%	91%	81%	90%	95%	95%	95%	95%	84%
LWG	72%	73%	85%	79%	85%	85%	87%	87%	87%	79%	66%	71%
LGS	76%	76%	77%	88%	86%	86%	86%	86%	86%	73%	72%	76%
LMN	65%	68%	68%	80%	81%	83%	83%	83%	74%	68%	71%	65%
IHR	61%	68%	83%	69%	83%	83%	83%	83%	83%	60%	67%	83%
MCN	83%	87%	87%	94%	94%	94%	93%	93%	86%	86%	83%	88%
JDA	76%	85%	86%	80%	82%	83%	78%	84%	85%	80%	81%	76%
TDA	71%	77%	78%	91%	85%	81%	83%	84%	84%	85%	84%	87%
BON	87%	88%	91%	92%	93%	88%	84%	82%	83%	87%	88%	89%

- The availability factors are also used to reflect reserve requirements because HYDSIM has no other mechanism to account for incremental reserves, which require the system to have units available to increase generation. After calculating availability factors based on unit outage information, the availability factors are further decreased to reflect units needed for meeting reserve requirements. The availability factors assume the federal hydro system will provide 82.8 percent of the estimated operating contingency reserves required. The availability factors reflect operating contingency reserve requirements at 3 percent of the total control area generation and 3 percent of the total loads. A balancing reserve requirement of 602 MW for all periods in both FY2020 and FY 2021 is also included in the availability factors. The availability factors also reflect the 1 percent of peak efficiency turbine operating requirements at the four lower Snake River projects and the four lower Columbia River projects in April-November. The following tables show availability factors after considering these reserve and turbine operating requirements in addition to the outage assumptions.

FY 2020:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	86%	98%	98%	81%	79%	83%	82%	98%	98%	79%	70%	98%
HGH	98%	98%	98%	77%	72%	49%	61%	72%	76%	68%	50%	89%
ALF	92%	82%	82%	92%	92%	92%	92%	71%	71%	61%	71%	71%
DWR	89%	75%	94%	89%	98%	98%	98%	98%	98%	98%	98%	80%
GCL	55%	61%	60%	60%	66%	66%	65%	65%	63%	66%	67%	55%
CHJ	69%	77%	75%	75%	83%	84%	82%	82%	80%	83%	85%	69%
LWG	47%	60%	61%	63%	64%	70%	76%	76%	76%	66%	63%	61%
LGS	61%	63%	62%	72%	43%	42%	49%	49%	49%	66%	54%	63%
LMN	25%	39%	27%	52%	56%	54%	63%	78%	78%	75%	63%	59%
IHR	48%	52%	54%	53%	61%	59%	69%	69%	69%	45%	64%	53%
MCN	64%	63%	67%	68%	68%	67%	73%	73%	70%	73%	73%	64%
JDA	49%	66%	85%	85%	84%	84%	77%	82%	84%	78%	80%	69%
TDA	54%	55%	63%	61%	58%	69%	62%	64%	62%	54%	50%	48%
BON	74%	73%	71%	73%	74%	73%	76%	75%	61%	74%	72%	74%

FY 2021:

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
LIB	96%	96%	96%	78%	83%	79%	79%	96%	96%	88%	60%	84%
HGH	98%	98%	98%	98%	98%	48%	44%	48%	53%	48%	48%	48%
ALF	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	71%	71%
DWR	83%	40%	89%	86%	95%	95%	95%	95%	95%	95%	95%	75%
GCL	59%	59%	61%	64%	65%	64%	65%	70%	67%	63%	67%	60%
CHJ	73%	75%	82%	80%	83%	81%	81%	89%	85%	79%	84%	76%
LWG	53%	52%	62%	57%	62%	62%	71%	71%	71%	63%	54%	52%
LGS	56%	56%	57%	66%	63%	64%	70%	70%	70%	60%	60%	56%
LMN	53%	55%	55%	65%	66%	68%	75%	75%	67%	62%	64%	53%
IHR	50%	56%	69%	56%	69%	69%	78%	78%	78%	56%	63%	69%
MCN	63%	63%	63%	68%	68%	68%	73%	73%	67%	68%	65%	64%
JDA	71%	79%	80%	74%	76%	77%	71%	77%	78%	73%	73%	70%
TDA	54%	58%	59%	70%	65%	61%	60%	61%	61%	62%	61%	67%
BON	69%	69%	72%	73%	73%	69%	69%	68%	68%	72%	72%	73%

- **Initial Contents** for the major federal projects are based on the 70-year average of September 30 storage ending content from the 08_RateCase10_final study.
- **Flood Control Rule Curves** for Grand Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan and are also adjusted to shift some Dworshak flood control space to Grand Coulee when possible, while still meeting Dworshak's local flood control requirements and following Corps procedures.
- **Non-federal projects** are run to the resulting contents from the AER Step. This allows the federal projects to operate differently without causing the non-federal projects to adjust operations to meet the system load.
- **Bonneville Chum Flow Objectives** are determined each period based on 11.5 or 11.3 feet tailwater elevation requirements below Bonneville November through March, and 16.5 feet tailwater in April, and the historical Willamette streamflow data. The January-March minimum Chum flows are re-calculated based on the regulated outflow at Bonneville in December. Grand Coulee operates to meet the chum flow objectives November through March subject to the draft limits described under Grand Coulee.
- **April 10 URC** objectives are included in the study. The BiOp objective is for the federal reservoirs to be at their April 10 URC elevations each year, as full as possible in preparation for providing flows to meet the spring flow objectives, although minimum flow requirements and forecast errors can cause projects to miss this refill objective. The objective is for Grand Coulee to operate with an 85 percent chance of reaching the April 10 elevation and for Libby and Hungry Horse to operate with a 75 percent chance. The April 10 objectives are modeled as April 15 objectives in HYDSIM.
- **Lower Granite flow targets** 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 surrogate DOP20 study for 2020 and 2021 rate case studies with the following additions: 1) One MAF of flow augmentation is stored at Mica in January and is released in February and March in years when the final February and March forecasts of April through August volume at The Dalles is less than 75 MAF; otherwise it is released all in July unless the regulated outflow at McNary is below 250,000 cfs in May-June then releases start in May with the limit of 8,000 cfs in May-Jun periods. The 1 MAF storage in January is limited by a minimum flow of 30,000 cfs for whitefish if the January 1 forecast of April through August volume at The Dalles is less than 75 MAF; otherwise the minimum flow is 20,000 cfs. Storage in February or March is not allowed if the outflows decrease more than 19,000 cfs from the January outflow. 2) The trout spawning operation is included at Arrow where April flows are at least 15,000 cfs and May and June flows are equal to or greater than the preceding month whenever possible. No more than a 5,000 cfs decrease is allowed in June from May outflow. 3) Mica, Arrow and Duncan projects are on surrogate DOP20 contents by July 31. The outflow at Arrow in July cannot exceed 80,000 cfs.
- **Non-Treaty Storage Agreement (NTSA):** A total of 3 MAF NTSA storage and release is included in the study. Modeling the NTSA operations required plant data updates at Mica and Arrow to increase their maximum storage contents and their Upper Rule Curves. The study includes the NTSA dry-year operations and spring-summer operations. The NTSA also includes operations driven by price, but this operation is not included in this study due to the complexities of incorporating price-based operating decisions.

- o **For Dry Year NTSA operation**
 - Store ½ MAF into Mica (or Arrow) in November-June if the April Final April-August volume forecast at The Dalles is 91.4 MAF or higher.
 - Release ½ MAF from Mica (or Arrow) in May-June if the April Final April-August volume forecast at The Dalles is less than 72.5 MAF (forecast trigger for Dry Years).
 - Water that is stored in November-June should not violate the minimum flow requirements at Priest Rapids, Bonneville, and McNary and the Arrow trout/whitefish operations. Water that is released in May or June should not violate the Arrow trout spawning operation.
- o **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 surrogate 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 April 10-15, 90,000 cfs April 16-30 and 135,000 cfs in May. In dry years, the May flow targets will be reduced to 100,000 cfs if Grand Coulee inflow is below 90,000 cfs and will be reduced to 115,000 cfs if Grand Coulee inflow is between 90,000 cfs and 120,000 cfs.
- **Brownlee** drafts to 2062.0 feet (391.5 ksfd) in July, 2059.0 feet (373.5 ksfd) on August 15, 2055.0 feet (349.4 ksfd) on August 31, 2048.0 feet (309.7 ksfd) in September, and 2050.0 feet (320.4 ksfd) 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 ksfd) but will draft deeper in order to meet the minimum flow of 9,000 cfs at Hells Canyon. In January, Brownlee targets 2065.0 feet (409.5 ksfd) but can fill higher to avoid exceeding the maximum flow limit. In February-May, Brownlee remains full at 2077.0 feet (491.7 ksfd) except when the URC or minimum flow at Hells Canyon of 9,000 cfs requires deeper drafts. In June, Brownlee targets full except when draft is needed to maintain a minimum flow of 7,000 cfs at Hells Canyon. Brownlee has a maximum flow limit of 35,000 cfs in all periods except 30,000 cfs in January.
- **Dworshak** has a maximum discharge of 17,000 cfs April-December and 14,000 cfs January-March to reflect typical actual operations and avoid exceeding 110 percent TDG. January through June outflows are reshaped to reduce forced spill. July and August outflows are smoothed to reflect typical actual operations by using 11,000 cfs minimum in July and August 1-15, and a maximum 25 percent reduction from the first half of August to the second half of August. Dworshak has a maximum elevation of 1590 feet (922.8 ksfd) in July, and a target elevation of 1519 feet (389.4 ksfd) in September.

- **Libby** has a September minimum flow of 6000 cfs. In the fall, Libby minimizes October draft and maximizes December draft by targeting outflow of 4000 cfs in October-November, and limiting outflow to 20,000 cfs maximum October-December. Libby can release above 4000 cfs in October-November if the outflow in December exceeds 20,000 cfs. Libby cannot fill above 2435 ft (1977.1 ksfd) in November and 2454 ft (2394.9 ksfd) 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 ksfd) in April and 3558 feet (1480.1 ksfd) in June. Outflows from the second half of April and May are reshaped to prevent June outflow from exceeding 9000 cfs. Columbia Falls minimum flow requirements in July-September include the additional irrigation flow of 493 cfs in dry years. Hungry Horse minimum is set to 50% of the Columbia Falls minimum flow during March-June if Hungry Horse April-May-September volume forecast is less than 1450 KAF.
- **Grand Coulee** is subject to a draw down limit of 1.3 feet per day when Grand Coulee is above 1240 feet, and 1.0 feet per day when Grand Coulee is at or below 1240 feet. It operates at 1284 feet (2453.5 ksfd) in September and between 1283 feet (2413.9 ksfd) and 1288 feet (2615.5 ksfd) in October. The draft limits for Chum flow in November and December are 1275 feet (2102.4 ksfd) and 1270 feet (1915.1 ksfd), respectively. Grand Coulee cannot fill above 1288 feet (2615.5 ksfd) in any period except July-August in some years that it can fill to 1290 feet (2697.1 ksfd) in order to reduce forced spill. Grand Coulee drafts to support the Chum flow target January through March subject to the draft limits of about 10 feet below the computed variable draft limit in non-drum gate maintenance years. The Bureau performs maintenance during the spring on the spillway drum gates at least one of every three years, at least two of every five years, and at least three of every seven years. This drum gate maintenance requires a maximum Lake Roosevelt elevation of 1267.0 feet (1805.3 ksfd) at the end of February and 1255 feet (1380.2 ksfd) from March through April 30. Years when the April flood control elevation at Grand Coulee based on February water supply forecast is less than 1255 feet (1380.2 ksfd) are automatic drum gate maintenance years. Grand Coulee can draft further if needed to support the Vernita Bar flow requirement at Priest Rapids. The deepest draft limits at Grand Coulee for Vernita Bar minimum flow requirement without violating the draft limits are 1270 feet (1915.1 ksfd) in December, 1260 feet (1553.3 ksfd) in January, 1250 feet (1209.0 ksfd) in February, and 1240 feet (884.4 ksfd) March-May. Grand Coulee can only draft 10 feet below the flood control to support the Steelhead minimum flows in April-May. In all periods, Grand Coulee cannot draft below 1228 feet (525.6 ksfd) unless it is on flood control operation. In June, Grand Coulee operates between 1285 feet (2493.0 ksfd) and 1288 feet (2615.5 ksfd) unless it is on flood control. Grand Coulee's April-December operation includes additional draft as allowed by the Lake Roosevelt Incremental Storage Releases Program (LRISRP). After meeting all modeling requirements, Grand Coulee's January through March operation is re-evaluated to put more generation in January and February or evenly distribute the secondary energy when possible without violating the one foot per day draft rate limit and other constraints in the study.
- **Columbia Basin Irrigation Project Pumping (Banks Lake)** is captured through the PNCA data submittal estimates of pumping, which are based on the average of the past five years' actual net pumping.

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

Spill Criteria for BP20 FY2020-21 Initial Proposal					
Projects	Spill	Min Turb	Days	Hour Ending	Notes
Lower Granite	115%/120% gas cap; 18 kcfs	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	All years
Little Goose	115%/120% gas cap; 30% of flow	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	All years
Lower Monumental	115%/120% gas cap; 17 kcfs	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	All years
Ice Harbor	115%/120% gas cap; 30% of flow	9.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	All years
McNary	115%/120% gas cap; 57% of flow	50 kcfs	Apr 10 - Jun 15; Jun 16 - Aug 31	All hours	All years
John Day	115%/120% gas cap; 35% of flow	50 kcfs	Apr 10 - Jun 15; Jun 16 - Aug 31	All hours	All years
The Dalles	115%/120% gas cap; 40% of flow	50 kcfs	Apr 10 - Jun 15; Jun 16 - Aug 31	All hours	All years
Bonneville	115%/120% gas cap; 95 kcfs	30 kcfs	Apr 10 - Jun 15; Jun 16 - Aug 31	All hours	All years

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

Spring/Summer: TDG spill production estimates in kcfs

	TDG	APR	MAY	JUN	JUL	AUG
LWG	120%	59	59	59	44	45
LGS	120%	56	56	56	52	52
LMN	120%	30	47	47	47	41
IHR	120%	93	93	90	85	85
MCN	120%	180	185	180	165	150
JDA	120%	140	140	140	135	115
TDA	120%	160	135	130	140	130
BON	120%	120	120	125	130	140
CHJ	120%	210	210	210	210	210
GCL_DG	120%	40	40	40	40	40
GCL_RO	120%	20	13	5	6	14
LWG	122%	67	67	67	69	63
LGS	122%	65	65	65	61	61
LMN	122%	68	65	66	72	74
IHR	122%	95	95	95	95	95
MCN	122%	230	225	225	210	185
JDA	122%	175	175	160	170	150
TDA	122%	265	265	260	265	240
BON	122%	150	150	150	160	170
CHJ	122%	280	280	280	280	280
GCL_DG	122%	77	79	79	79	76
GCL_RO	122%	25	18	10	10	19
LWG	125%	74	74	74	77	77
LGS	125%	80	80	80	80	80
LMN	125%	80	75	80	85	90
IHR	125%	110	110	110	110	110
MCN	125%	270	270	280	275	230
JDA	125%	180	200	200	185	205
TDA	125%	300	300	300	300	300
BON	125%	195	195	195	200	215
CHJ	125%	280	280	280	280	280
GCL_DG	125%	90	90	95	95	90
GCL_RO	125%	32	27	20	20	28
LWG	127%	80	80	80	80	80
LGS	127%	95	95	95	95	95
LMN	127%	90	80	85	95	95
IHR	127%	120	120	120	120	120
MCN	127%	285	280	285	290	305
JDA	127%	220	215	215	225	250
TDA	127%	300	300	300	300	300
BON	127%	225	225	230	235	245
CHJ	127%	280	280	280	280	280
GCL_DG	127%	100	100	100	100	95
GCL_RO	127%	38	33	27	27	33
LWG	130%	90	90	90	90	90
LGS	130%	115	115	115	115	115

LMN	130%	100	95	95	110	110
IHR	130%	130	130	130	135	135
MCN	130%	350	350	350	350	350
JDA	130%	290	235	235	235	340
TDA	130%	300	300	300	300	300
BON	130%	275	275	275	280	290
CHJ	130%	280	280	280	280	280
GCL_DG	130%	110	110	110	115	105
GCL_RO	130%	46	43	37	38	42
LWG	135%	100	100	100	105	105
LGS	135%	170	175	175	170	170
LMN	135%	120	120	120	125	130
IHR	135%	155	135	135	155	160
MCN	135%	350	350	350	350	350
JDA	135%	350	350	350	350	350
TDA	135%	300	300	300	300	300
BON	135%	350	350	350	350	350
CHJ	135%	280	280	280	280	280
GCL_DG	135%	125	130	130	130	125
GCL_RO	135%	59	58	55	55	57

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

GCL_DG: Spill through drumgates is assumed to occur July through August.

Fall/Winter: TDG spill production estimates in kcfs

	TDG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
BON	110%	20	20	20	20	20	20	20
TDA	110%	55	65	80	90	100	90	65
JDA	110%	35	40	50	60	65	60	30
MCN	110%	60	60	70	75	80	75	65
IHR	110%	20	19	19	22	23	23	24
LMN	110%	10	10	10	10	10	10	10
LGS	110%	11	20	20	20	23	23	23
DWR	110%	4	4	4	4	4	4	4
LWG	110%	19	7	7	7	21	21	21
CHJ	110%	21	21	21	21	21	21	21
GCL_DG	110%	5	5	5	5	5	5	5
BON	115%	50	50	50	50	45	45	45
TDA	115%	90	90	90	90	90	90	90
JDA	115%	65	65	75	80	90	85	85
MCN	115%	90	90	110	120	125	120	80
IHR	115%	24	24	24	24	27	35	35
LMN	115%	13	14	14	14	14	13	18
LGS	115%	24	34	34	34	34	34	38
LWG	115%	20	40	41	41	41	41	41
DWR	110%	4	4	4	4	4	4	4
CHJ	115%	48	48	48	48	48	48	48
GCL_DG	115%	10	10	10	10	10	10	10
BON	120%	135	135	130	125	120	120	115
TDA	120%	160	160	160	160	160	160	160
JDA	120%	110	110	105	110	120	115	110
MCN	120%	140	140	145	155	160	155	150
IHR	120%	75	67	67	66	74	64	90
LMN	120%	25	53	53	53	53	53	30
LGS	120%	52	52	52	52	52	52	52
LWG	120%	45	55	55	55	55	55	55
DWR	110%	4	4	4	4	4	4	4
CHJ	120%	210	210	210	210	210	210	210
GCL_DG	120%	15	15	15	15	15	15	15

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

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

Table 9.1.1
Loads and Resources - Federal System
Fiscal Year: 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Firm Obligations															
1 Load Following	2,863	3,347	3,824	3,767	3,519	3,143	3,175	3,175	3,183	3,380	3,648	3,476	3,456	3,091	3,368
2 Preference Customers	2,647	3,193	3,646	3,601	3,359	2,951	2,818	2,818	2,748	2,918	3,126	3,053	3,027	2,717	3,064
3 Federal Agencies	108	136	161	156	146	129	112	112	106	108	118	115	114	108	125
4 USBR	108	18.2	17.7	9.97	13.9	63.0	244	244	329	354	405	308	315	266	179
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Tier 1 Block	539	889	888	976	887	871	427	427	152	21.2	346	392	390	645	585
7 Tier 1 Block	539	889	888	976	887	871	427	427	152	21.2	346	392	390	645	585
8 Slice	2,545	3,175	3,299	3,003	2,775	2,774	2,562	2,456	2,782	3,307	2,817	2,851	2,645	2,584	2,860
9 Slice Block	1,159	1,356	1,559	1,553	1,373	1,312	1,216	1,216	1,179	1,155	1,210	1,182	1,182	1,126	1,282
10 Slice Output from T1 System	1,386	1,819	1,740	1,451	1,402	1,463	1,346	1,240	1,603	2,152	1,607	1,670	1,464	1,457	1,578
11 Direct Service Industries	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
12 Direct Service Industry	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
13 Contract Deliveries	663	668	666	666	665	661	663	663	664	664	687	722	778	645	672
14 Exports	456	456	456	456	456	456	456	456	456	456	478	514	571	439	464
15 Intra-Regional Transfers (Out)	13.9	18.6	16.9	16.6	16.1	11.7	14.2	14.2	14.5	14.4	15.8	14.8	14.8	13.7	15.1
16 Firm Surplus Sale	193	193	193	193	193	193	193	193	193	193	193	193	193	193	193
17 Total Firm Obligations	6,622	8,090	8,690	8,425	7,858	7,461	6,839	6,733	6,792	7,384	7,510	7,453	7,282	6,977	7,497

Table 9.1.1
Loads and Resources - Federal System
Fiscal Year: 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Net Resources															
18 Hydro Resources	5,593	7,473	7,127	5,806	5,572	5,898	4,565	4,357	6,485	8,605	6,907	7,107	6,135	6,032	6,382
19 Regulated Hydro - Net	5,284	7,213	6,952	5,689	5,441	5,665	4,127	3,912	5,763	7,894	6,498	6,732	5,760	5,712	6,032
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	3.04	3.10	3.09	3.09	2.83	2.72	2.63	2.63	2.63	2.63	2.88
22 Other Resources	1,160	1,180	1,164	1,142	1,159	1,165	1,204	1,190	1,195	1,194	1,193	1,156	1,175	1,171	1,174
23 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Large Thermal Resources	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116
26 Renewable Resources	44.4	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
28 Contract Purchases	171	177	171	170	167	167	170	168	170	187	176	175	162	171	172
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)	5.11	3.80	3.24	2.50	2.40	4.58	5.22	5.22	4.81	6.56	5.37	4.12	4.15	4.56	4.36
31 Non-Federal CER	139	138	134	139	137	134	138	138	134	138	139	138	129	138	137
32 Slice Transmission Loss Return	26.4	34.6	33.1	27.6	26.7	27.8	25.6	23.6	30.5	40.9	30.6	31.8	27.8	27.7	30.0
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Reserves & Losses	-208	-263	-253	-213	-206	-216	-178	-171	-236	-300	-248	-253	-224	-220	-231
35 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Contingency Reserves (Non-Spin)	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	-208	-263	-253	-213	-206	-216	-178	-171	-236	-300	-248	-253	-224	-220	-231
40 Total Net Resources	6,718	8,566	8,210	6,905	6,693	7,015	5,761	5,544	7,613	9,686	8,028	8,185	7,249	7,154	7,497
41 Total Surplus/Deficit	95	476	-479	-1,520	-1,165	-446	-1,078	-1,189	821	2,302	517	732	-33	177	0

Table 9.1.1
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Firm Obligations															
1 Load Following	2,870	3,355	3,834	3,775	3,559	3,129	3,181	3,181	3,186	3,385	3,654	3,456	3,484	3,094	3,374
2 Preference Customers	2,649	3,196	3,650	3,604	3,391	2,932	2,820	2,820	2,746	2,918	3,126	3,020	3,057	2,715	3,064
3 Federal Agencies	113	141	166	162	154	134	118	118	111	113	123	119	121	113	131
4 USBR	108	18.2	17.7	9.97	14.0	63.0	244	244	329	354	405	316	306	266	179
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Tier 1 Block	540	889	888	976	919	871	428	428	152	21.1	347	390	393	646	587
7 Tier 1 Block	540	889	888	976	919	871	428	428	152	21.1	347	390	393	646	587
8 Slice	2,581	3,212	3,342	3,044	2,864	2,813	2,494	2,344	2,821	3,271	2,850	2,884	2,673	2,615	2,884
9 Slice Block	1,191	1,392	1,598	1,591	1,459	1,346	1,250	1,250	1,211	1,187	1,243	1,214	1,214	1,158	1,320
10 Slice Output from T1 System	1,390	1,820	1,744	1,453	1,405	1,467	1,244	1,094	1,610	2,084	1,608	1,670	1,460	1,456	1,565
11 Direct Service Industries	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
12 Direct Service Industry	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
13 Contract Deliveries	506	505	506	505	506	502	502	502	502	502	523	542	666	502	514
14 Exports	439	439	439	439	439	439	439	439	439	439	460	479	604	439	450
15 Intra-Regional Transfers (Out)	13.8	13.2	13.4	13.2	13.4	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	9.44	11.1
16 Firm Surplus Sale	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
17 Total Firm Obligations	6,509	7,974	8,582	8,313	7,859	7,327	6,617	6,467	6,673	7,190	7,385	7,284	7,228	6,868	7,372

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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Net Resources															
18 Hydro Resources	5,593	7,473	7,127	5,806	5,572	5,898	4,565	4,357	6,492	8,612	6,898	7,094	6,135	6,032	6,384
19 Regulated Hydro - Net	5,284	7,213	6,952	5,689	5,441	5,665	4,127	3,912	5,770	7,901	6,488	6,719	5,760	5,712	6,033
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
22 Other Resources	1,157	1,175	1,161	1,140	1,156	1,162	1,198	1,185	434	482	1,187	1,153	1,171	1,167	1,048
23 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Large Thermal Resources	1,116	1,116	1,116	1,116	1,116	1,116	1,116	1,116	360	409	1,116	1,116	1,116	1,116	994
26 Renewable Resources	41.3	59.2	45.2	24.2	40.0	45.9	82.2	69.1	74.0	73.1	71.5	36.9	55.4	51.4	54.0
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Contract Purchases	166	168	173	162	164	168	163	160	165	179	170	160	168	167	167
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)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Non-Federal CER	139	133	139	134	137	139	138	138	134	138	139	127	139	138	137
32 Slice Transmission Loss Return	26.4	34.6	33.2	27.6	26.7	27.9	23.7	20.8	30.6	39.6	30.6	31.8	27.8	27.7	29.8
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Reserves & Losses	-207	-263	-253	-212	-206	-216	-177	-171	-214	-279	-248	-252	-224	-220	-227
35 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Contingency Reserves (Non-Spin)	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	-207	-263	-253	-212	-206	-216	-177	-171	-214	-279	-248	-252	-224	-220	-227
40 Total Net Resources	6,710	8,553	8,209	6,896	6,687	7,012	5,748	5,532	6,877	8,994	8,008	8,155	7,251	7,146	7,372
41 Total Surplus/Deficit	201	579	-373	-1,417	-1,172	-314	-868	-935	204	1,804	622	871	22	278	0

Table 9.1.2
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HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Firm Obligations															
1 Load Following	1,311,736	1,428,664	1,662,026	1,660,530	1,484,781	1,396,766	698,304	698,304	1,372,095	1,489,079	1,610,671	770,665	770,665	1,309,100	17,663,387
2 Preference Customers	1,234,396	1,366,539	1,588,703	1,589,295	1,420,510	1,324,621	625,649	625,649	1,205,752	1,305,837	1,408,261	698,414	698,414	1,181,995	16,274,035
3 Federal Agencies	48,352	55,450	67,705	66,298	59,207	55,582	23,912	23,912	44,996	47,114	51,969	25,945	25,945	45,153	641,540
4 USBR	28,988	6,675	5,617	4,937	5,065	16,563	48,743	48,743	121,347	136,129	150,441	46,306	46,306	81,952	747,811
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Tier 1 Block	239,791	381,680	391,620	432,080	368,452	385,131	91,876	91,876	66,330	8,808	152,952	86,657	86,657	276,947	3,060,857
7 Tier 1 Block	239,791	381,680	391,620	432,080	368,452	385,131	91,876	91,876	66,330	8,808	152,952	86,657	86,657	276,947	3,060,857
8 Slice	1,172,135	1,361,193	1,425,368	1,322,945	1,166,144	1,235,439	559,171	534,892	1,230,150	1,486,261	1,336,932	668,661	622,926	1,121,937	15,244,154
9 Slice Block	500,565	542,490	623,765	645,875	549,365	545,589	252,991	252,991	471,760	480,476	503,486	245,756	245,756	450,541	6,311,407
10 Slice Output from T1 System	671,570	818,703	801,603	677,069	616,779	689,850	306,180	281,902	758,390	1,005,785	833,446	422,905	377,170	671,395	8,932,747
11 Direct Service Industries	5,084	4,747	4,809	4,826	4,694	5,088	2,442	2,442	4,886	4,936	4,824	2,565	2,565	4,570	58,479
12 Direct Service Industry	5,084	4,747	4,809	4,826	4,694	5,088	2,442	2,442	4,886	4,936	4,824	2,565	2,565	4,570	58,479
13 Contract Deliveries	428,822	414,925	424,666	427,895	402,603	424,126	207,392	207,392	422,711	414,508	435,433	219,121	236,780	398,453	5,064,827
14 Exports	339,588	329,090	339,588	339,588	317,679	339,132	164,316	164,316	339,588	328,633	348,532	175,900	193,559	315,975	4,035,485
15 Intra-Regional Transfers (Out)	5,920	8,692	7,935	8,078	7,781	4,766	2,961	2,961	5,980	5,646	6,672	3,107	3,107	5,335	78,939
16 Firm Surplus Sale	83,315	77,143	77,143	80,229	77,143	80,229	40,114	40,114	77,143	80,229	80,229	40,114	40,114	77,143	950,403
17 Total Firm Obligations	3,157,568	3,591,209	3,908,488	3,848,276	3,426,674	3,446,550	1,559,185	1,534,906	3,096,172	3,403,592	3,540,812	1,747,670	1,719,594	3,111,007	41,091,704

Table 9.1.2
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HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Net Resources															
18 Hydro Resources	2,835,998	3,523,416	3,456,527	2,868,228	2,584,694	2,926,038	1,074,469	1,034,783	3,141,061	4,088,294	3,694,553	1,840,227	1,618,129	2,873,258	37,559,677
19 Regulated Hydro - Net	2,675,243	3,388,074	3,366,442	2,817,606	2,525,411	2,808,882	970,398	917,885	2,806,515	3,745,633	3,505,231	1,758,521	1,532,723	2,716,908	35,535,474
20 Independent Hydro - Net	159,600	134,202	88,794	49,281	58,069	115,862	103,429	116,256	333,409	341,531	188,227	81,158	84,858	155,298	2,009,974
21 Small Hydro - Net	1,155	1,140	1,291	1,341	1,214	1,293	642	642	1,137	1,130	1,095	548	548	1,052	14,229
22 Other Resources	499,873	466,756	464,684	474,323	464,937	485,981	251,240	248,236	479,412	496,634	495,874	239,714	245,088	470,133	5,782,886
23 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Large Thermal Resources	482,112	446,400	446,400	464,256	446,400	464,256	232,128	232,128	446,400	464,256	464,256	232,128	232,128	446,400	5,499,648
26 Renewable Resources	17,761	20,356	18,284	10,067	18,537	21,725	19,112	16,108	33,012	32,378	31,618	7,586	12,960	23,733	283,238
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Contract Purchases	118,569	112,931	112,485	113,923	108,570	114,957	56,846	56,384	112,144	121,715	117,979	58,743	57,873	110,609	1,373,728
29 Imports	432	400	400	416	400	416	208	208	400	416	416	208	208	400	4,928
30 Intra-Regional Transfers (In)	2,117	1,360	1,240	1,206	840	1,997	1,102	1,102	1,720	2,746	2,288	780	780	1,840	21,118
31 Non-Federal CER	103,248	95,600	95,600	99,424	95,600	99,424	49,712	49,712	95,600	99,424	99,424	49,712	49,712	95,600	1,177,792
32 Slice Transmission Loss Return	12,772	15,571	15,245	12,877	11,730	13,120	5,823	5,361	14,424	19,129	15,851	8,043	7,173	12,769	169,890
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Reserves & Losses	-103,438	-122,386	-120,386	-103,233	-94,246	-105,301	-41,347	-40,079	-112,195	-141,170	-129,054	-64,029	-57,523	-103,167	-1,337,555
35 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Contingency Reserves (Non-Spin)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 Transmission Losses	-103,438	-122,386	-120,386	-103,233	-94,246	-105,301	-41,347	-40,079	-112,195	-141,170	-129,054	-64,029	-57,523	-103,167	-1,337,555
40 Total Net Resources	3,351,002	3,980,716	3,913,310	3,353,242	3,063,955	3,421,675	1,341,208	1,299,324	3,620,422	4,565,474	4,179,353	2,074,655	1,863,567	3,350,833	43,378,736
41 Total Surplus/Deficit	193,434	389,508	4,822	-495,034	-362,719	-24,875	-217,977	-235,583	524,250	1,161,881	638,541	326,985	143,973	239,826	2,287,032

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HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Firm Obligations															
1 Load Following	1,316,403	1,406,981	1,695,433	1,636,392	1,447,089	1,417,047	700,321	700,321	1,374,021	1,492,239	1,613,453	713,036	831,875	1,311,300	17,655,913
2 Preference Customers	1,236,826	1,344,061	1,618,454	1,564,067	1,381,968	1,339,566	626,571	626,571	1,205,543	1,306,715	1,408,749	645,257	752,800	1,181,991	16,239,138
3 Federal Agencies	50,589	56,920	70,678	67,720	60,301	58,426	25,008	25,008	47,132	49,395	54,262	25,035	29,207	47,358	667,038
4 USBR	28,988	6,001	6,301	4,605	4,820	19,055	48,743	48,743	121,347	136,129	150,441	42,744	49,868	81,952	749,737
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Tier 1 Block	240,195	380,503	393,514	430,260	368,231	386,863	92,066	92,066	66,454	8,783	153,094	80,092	93,441	277,258	3,062,821
7 Tier 1 Block	240,195	380,503	393,514	430,260	368,231	386,863	92,066	92,066	66,454	8,783	153,094	80,092	93,441	277,258	3,062,821
8 Slice	1,189,033	1,360,715	1,472,826	1,317,176	1,153,105	1,275,782	539,719	507,527	1,277,393	1,467,521	1,329,690	652,314	649,433	1,132,505	15,324,738
9 Slice Block	514,605	534,533	664,832	636,398	560,165	581,384	259,943	259,943	484,497	493,755	516,924	233,052	271,894	463,269	6,475,194
10 Slice Output from T1 System	674,428	826,181	807,994	680,778	592,940	694,398	279,776	247,584	792,896	973,765	812,766	419,261	377,539	669,236	8,849,545
11 Direct Service Industries	5,084	4,740	4,809	4,826	4,533	5,081	2,442	2,442	4,886	4,936	4,824	2,368	2,762	4,570	58,303
12 Direct Service Industry	5,084	4,740	4,809	4,826	4,533	5,081	2,442	2,442	4,886	4,936	4,824	2,368	2,762	4,570	58,303
13 Contract Deliveries	355,473	343,213	355,540	354,424	321,710	353,194	171,048	171,048	351,624	342,096	361,572	174,425	222,514	341,092	4,218,973
14 Exports	326,507	316,413	326,507	326,507	294,910	326,068	157,987	157,987	326,507	315,975	335,451	162,369	208,448	315,975	3,897,613
15 Intra-Regional Transfers (Out)	5,917	6,312	6,838	6,575	6,312	4,077	1,963	1,963	3,775	3,926	3,926	1,812	2,114	3,775	59,282
16 Firm Surplus Sale	23,049	20,488	22,195	21,342	20,488	23,049	11,098	11,098	21,342	22,195	22,195	10,244	11,951	21,342	262,077
17 Total Firm Obligations	3,106,188	3,496,152	3,922,123	3,743,078	3,294,667	3,437,967	1,505,597	1,473,404	3,074,378	3,315,576	3,462,632	1,622,235	1,800,025	3,066,726	40,320,749

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HLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Net Resources															
18 Hydro Resources	2,805,295	3,536,827	3,434,219	2,868,819	2,449,879	2,891,349	1,062,830	1,027,096	3,249,452	4,074,846	3,585,618	1,828,651	1,615,125	2,863,371	37,293,378
19 Regulated Hydro - Net	2,644,539	3,403,523	3,343,062	2,819,308	2,392,763	2,772,905	958,759	910,198	2,914,906	3,732,185	3,396,296	1,748,864	1,527,755	2,707,021	35,272,085
20 Independent Hydro - Net	159,600	132,206	89,824	48,212	55,944	117,108	103,429	116,256	333,409	341,531	188,227	79,280	86,780	155,298	2,007,106
21 Small Hydro - Net	1,155	1,098	1,333	1,299	1,172	1,335	642	642	1,137	1,130	1,095	506	590	1,052	14,187
22 Other Resources	498,659	447,509	481,290	455,779	445,218	502,352	249,934	247,135	174,756	200,309	493,715	221,340	262,059	468,513	5,148,571
23 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Large Thermal Resources	482,112	428,544	464,256	446,400	428,544	482,112	232,128	232,128	144,000	170,144	464,256	214,272	249,984	446,400	4,885,280
26 Renewable Resources	16,547	18,965	17,034	9,379	16,674	20,240	17,806	15,007	30,756	30,165	29,459	7,068	12,075	22,113	263,291
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Contract Purchases	116,507	107,873	115,207	108,948	103,437	116,887	55,241	54,629	111,080	118,360	115,298	54,054	60,940	108,728	1,347,187
29 Imports	432	384	416	400	384	432	208	208	400	416	416	192	224	400	4,912
30 Intra-Regional Transfers (In)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Non-Federal CER	103,248	91,776	99,424	95,600	91,776	103,248	49,712	49,712	95,600	99,424	99,424	45,888	53,536	95,600	1,173,968
32 Slice Transmission Loss Return	12,827	15,713	15,367	12,948	11,277	13,207	5,321	4,709	15,080	18,520	15,458	7,974	7,180	12,728	168,307
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Reserves & Losses	-102,429	-122,049	-120,311	-102,539	-89,488	-104,824	-40,915	-39,766	-106,334	-131,870	-125,674	-62,969	-58,057	-102,770	-1,309,994
35 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Contingency Reserves (Non-Spin)	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	-102,429	-122,049	-120,311	-102,539	-89,488	-104,824	-40,915	-39,766	-106,334	-131,870	-125,674	-62,969	-58,057	-102,770	-1,309,994
40 Total Net Resources	3,318,031	3,970,160	3,910,406	3,331,007	2,909,047	3,405,764	1,327,091	1,289,094	3,428,954	4,261,646	4,068,957	2,041,076	1,880,068	3,337,843	42,479,142
41 Total Surplus/Deficit	211,843	474,007	-11,717	-412,071	-385,620	-32,204	-178,506	-184,310	354,576	946,070	606,324	418,841	80,043	271,117	2,158,393

Table 9.1.3
Loads and Resources - Federal System
Fiscal Year: 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Firm Obligations															
1 Load Following	818,412	984,250	1,183,376	1,142,299	964,153	938,460	444,544	444,544	995,734	944,648	1,103,787	480,603	556,488	916,130	11,917,429
2 Preference Customers	735,070	935,417	1,123,830	1,089,689	917,097	867,991	388,904	388,904	838,492	795,418	917,793	400,692	463,959	774,016	10,637,273
3 Federal Agencies	31,685	42,412	51,974	50,128	42,412	40,247	16,479	16,479	33,691	30,474	35,462	15,509	17,958	32,295	457,206
4 USBR	51,657	6,421	7,572	2,481	4,644	30,222	39,161	39,161	123,551	118,755	150,532	64,402	74,571	109,819	822,950
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Tier 1 Block	161,078	259,316	268,871	294,241	248,887	261,766	61,815	61,815	46,514	6,436	104,675	54,565	63,180	187,787	2,080,946
7 Tier 1 Block	161,078	259,316	268,871	294,241	248,887	261,766	61,815	61,815	46,514	6,436	104,675	54,565	63,180	187,787	2,080,946
8 Slice	721,431	927,779	1,029,227	911,566	765,318	825,974	363,153	349,262	839,932	895,055	759,037	357,798	392,862	738,185	9,876,578
9 Slice Block	361,512	435,339	536,448	509,248	406,535	428,869	184,876	184,876	405,721	351,115	396,979	179,591	207,948	360,427	4,949,483
10 Slice Output from T1 System	359,919	492,440	492,779	402,318	358,784	397,105	178,277	164,386	434,211	543,940	362,057	178,207	184,914	377,758	4,927,095
11 Direct Service Industries	3,844	3,905	4,119	4,102	3,657	3,840	1,878	1,878	4,043	3,704	4,104	1,760	2,038	4,070	46,941
12 Direct Service Industry	3,844	3,905	4,119	4,102	3,657	3,840	1,878	1,878	4,043	3,704	4,104	1,760	2,038	4,070	46,941
13 Contract Deliveries	64,561	66,629	70,976	67,530	60,542	66,979	31,452	31,452	71,139	63,356	75,381	40,781	62,162	66,252	839,192
14 Exports	0	0	0	0	0	0	0	0	0	0	7,052	9,242	25,643	0	41,937
15 Intra-Regional Transfers (Out)	4,389	4,721	4,633	4,272	3,456	3,915	2,137	2,137	4,796	4,727	5,071	2,225	2,576	4,538	53,596
16 Firm Surplus Sale	60,172	61,907	66,343	63,257	57,086	63,064	29,314	29,314	66,343	58,629	63,257	29,314	33,943	61,714	743,659
17 Total Firm Obligations	1,769,325	2,241,879	2,556,569	2,419,736	2,042,559	2,097,020	902,842	888,950	1,957,362	1,913,198	2,046,983	935,507	1,076,730	1,912,425	24,761,086

Table 9.1.3
Loads and Resources - Federal System
Fiscal Year: 2020 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Net Resources															
18 Hydro Resources	1,325,545	1,864,307	1,846,215	1,451,460	1,293,632	1,456,536	568,867	533,847	1,683,434	2,107,380	1,444,619	718,446	737,799	1,470,019	18,502,107
19 Regulated Hydro - Net	1,255,973	1,812,456	1,805,913	1,415,324	1,261,575	1,400,198	515,154	490,416	1,480,859	1,938,144	1,329,319	664,984	679,086	1,395,863	17,445,265
20 Independent Hydro - Net	68,738	50,945	39,222	35,092	31,158	55,329	53,243	42,961	201,604	168,410	114,436	53,062	58,250	73,315	1,045,765
21 Small Hydro - Net	835	905	1,080	1,044	899	1,009	470	470	972	826	864	400	463	842	11,076
22 Other Resources	363,443	383,725	401,682	375,266	341,648	379,842	182,267	180,237	409,946	363,391	391,502	176,305	206,273	373,141	4,528,668
23 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Large Thermal Resources	348,192	358,236	383,904	366,048	330,336	364,932	169,632	169,632	383,904	339,264	366,048	169,632	196,416	357,120	4,303,296
26 Renewable Resources	15,251	25,489	17,778	9,218	11,312	14,910	12,635	10,605	26,042	24,127	25,454	6,673	9,857	16,021	225,372
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Contract Purchases	8,842	14,891	14,710	12,460	7,949	9,286	4,318	4,053	14,284	12,625	12,744	4,245	4,507	12,768	137,682
29 Imports	312	321	344	328	296	327	152	152	344	304	328	152	176	320	3,856
30 Intra-Regional Transfers (In)	1,685	1,380	1,170	656	829	1,406	775	775	1,858	1,976	1,706	703	815	1,440	17,174
31 Non-Federal CER	0	3,824	3,824	3,824	0	0	0	0	3,824	0	3,824	0	0	3,824	22,945
32 Slice Transmission Loss Return	6,845	9,366	9,372	7,652	6,824	7,552	3,391	3,126	8,258	10,345	6,886	3,389	3,517	7,184	93,707
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Reserves & Losses	-51,000	-67,496	-67,531	-54,928	-49,015	-55,103	-22,601	-21,503	-63,656	-74,708	-55,725	-27,050	-28,531	-55,554	-694,403
35 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Contingency Reserves (Non-Spin)	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	-51,000	-67,496	-67,531	-54,928	-49,015	-55,103	-22,601	-21,503	-63,656	-74,708	-55,725	-27,050	-28,531	-55,554	-694,403
40 Total Net Resources	1,646,830	2,195,426	2,195,076	1,784,258	1,594,214	1,790,561	732,851	696,634	2,044,008	2,408,688	1,793,139	871,946	920,048	1,800,375	22,474,054
41 Total Surplus/Deficit	-122,495	-46,453	-361,493	-635,478	-448,345	-306,459	-169,991	-192,316	86,646	495,489	-253,843	-63,561	-156,682	-112,050	-2,287,032

Table 9.1.3
Loads and Resources - Federal System
Fiscal Year: 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Firm Obligations															
1 Load Following	818,830	1,012,133	1,157,167	1,172,479	944,652	907,827	444,981	444,981	996,642	944,862	1,104,761	531,133	505,841	916,467	11,902,756
2 Preference Customers	733,849	960,165	1,097,273	1,116,971	896,581	838,767	388,500	388,500	837,693	794,045	917,137	442,010	420,962	772,687	10,605,140
3 Federal Agencies	33,323	44,873	53,006	52,695	43,517	41,330	17,320	17,320	35,398	32,062	37,092	17,941	17,087	33,961	476,925
4 USBR	51,657	7,096	6,887	2,813	4,555	27,730	39,161	39,161	123,551	118,755	150,532	71,182	67,792	109,819	820,691
5 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Tier 1 Block	161,335	260,765	267,359	296,099	249,088	260,184	61,939	61,939	46,590	6,419	104,742	60,369	57,494	187,939	2,082,259
7 Tier 1 Block	161,335	260,765	267,359	296,099	249,088	260,184	61,939	61,939	46,590	6,419	104,742	60,369	57,494	187,939	2,082,259
8 Slice	731,159	955,434	1,013,790	947,762	771,216	814,315	358,089	336,390	821,794	887,496	790,807	385,770	377,151	749,935	9,941,108
9 Slice Block	371,652	469,116	524,194	547,312	420,121	418,537	189,957	189,957	416,675	360,818	407,574	203,920	194,210	370,609	5,084,651
10 Slice Output from T1 System	359,507	486,318	489,596	400,451	351,095	395,778	168,132	146,434	405,119	526,678	383,233	181,849	182,942	379,326	4,856,457
11 Direct Service Industries	3,844	3,900	4,119	4,102	3,531	3,835	1,878	1,878	4,043	3,704	4,104	1,945	1,852	4,070	46,805
12 Direct Service Industry	3,844	3,900	4,119	4,102	3,531	3,835	1,878	1,878	4,043	3,704	4,104	1,945	1,852	4,070	46,805
13 Contract Deliveries	21,031	21,168	20,602	21,607	18,091	19,528	9,544	9,544	21,600	19,089	27,648	20,763	33,359	20,093	283,667
14 Exports	0	0	0	0	0	0	0	0	0	0	7,052	10,214	23,312	0	40,578
15 Intra-Regional Transfers (Out)	4,384	3,187	3,102	3,253	2,725	2,935	1,434	1,434	3,246	2,869	3,095	1,585	1,510	3,020	37,781
16 Firm Surplus Sale	16,647	17,980	17,500	18,354	15,366	16,593	8,110	8,110	18,354	16,220	17,500	8,964	8,537	17,073	205,308
17 Total Firm Obligations	1,736,198	2,253,400	2,463,037	2,442,049	1,986,579	2,005,689	876,431	854,732	1,890,669	1,861,569	2,032,061	999,980	975,698	1,878,503	24,256,595

Table 9.1.3
Loads and Resources - Federal System
Fiscal Year: 2021 Water Year: 1937
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
Net Resources															
18 Hydro Resources	1,356,248	1,850,896	1,868,523	1,450,869	1,294,721	1,491,226	580,506	541,534	1,580,400	2,125,939	1,546,189	725,188	740,803	1,479,906	18,632,948
19 Regulated Hydro - Net	1,286,676	1,797,008	1,829,294	1,413,622	1,263,637	1,436,176	526,793	498,103	1,377,825	1,956,703	1,430,889	669,807	684,054	1,405,750	17,576,337
20 Independent Hydro - Net	68,738	52,941	38,191	36,161	30,206	54,083	53,243	42,961	201,604	168,410	114,436	54,940	56,328	73,315	1,045,556
21 Small Hydro - Net	835	947	1,038	1,086	878	967	470	470	972	826	864	442	421	842	11,055
22 Other Resources	362,401	399,841	382,612	392,493	331,584	360,968	181,404	179,512	148,104	146,815	389,764	193,706	187,744	372,047	4,028,996
23 Cogeneration Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Large Thermal Resources	348,192	376,092	366,048	383,904	321,408	347,076	169,632	169,632	123,840	124,336	366,048	187,488	178,560	357,120	3,819,376
26 Renewable Resources	14,209	23,749	16,564	8,589	10,176	13,892	11,772	9,880	24,264	22,479	23,716	6,218	9,184	14,927	209,620
27 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Contract Purchases	7,149	13,410	13,464	11,784	6,965	7,838	3,350	2,937	11,873	10,321	11,441	3,627	3,639	11,358	119,157
29 Imports	312	337	328	344	288	311	152	152	344	304	328	168	160	320	3,848
30 Intra-Regional Transfers (In)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Non-Federal CER	0	3,824	3,824	3,824	0	0	0	0	3,824	0	3,824	0	0	3,824	22,945
32 Slice Transmission Loss Return	6,837	9,249	9,312	7,616	6,677	7,527	3,198	2,785	7,705	10,017	7,289	3,459	3,479	7,214	92,364
33 Augmentation Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Reserves & Losses	-51,830	-67,546	-67,577	-55,415	-48,714	-55,520	-22,893	-21,677	-52,748	-68,758	-58,652	-27,780	-28,016	-55,774	-682,900
35 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Contingency Reserves (Non-Spin)	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	-51,830	-67,546	-67,577	-55,415	-48,714	-55,520	-22,893	-21,677	-52,748	-68,758	-58,652	-27,780	-28,016	-55,774	-682,900
40 Total Net Resources	1,673,969	2,196,601	2,197,021	1,799,731	1,584,557	1,804,512	742,367	702,307	1,687,629	2,214,316	1,888,742	894,740	904,170	1,807,538	22,098,201
41 Total Surplus/Deficit	-62,229	-56,799	-266,016	-642,318	-402,021	-201,177	-134,063	-152,426	-203,039	352,747	-143,319	-105,240	-71,528	-70,965	-2,158,393

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

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Table 10.1.1
Federal Report Surplus Deficit By Water Year
Fiscal Year 2020
BP20 Initial Proposal Report Date: 9/19/2018
S161-RC-20180919-153333

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1 1929 Federal Report Surplus Deficit	41.3	245	-649	-614	-173	-157	-1215	-1267	295	3123	-129	555	-20.3	128	90.3
2 1930 Federal Report Surplus Deficit	73.3	379	-636	-1391	-148	-202	-594	-870	442	1089	817	741	50.1	35.8	8.28
3 1931 Federal Report Surplus Deficit	85.0	351	-457	-1309	-212	-141	-761	-1368	629	874	749	990	69.4	73.2	8.43
4 1932 Federal Report Surplus Deficit	-161	-22.0	-556	-667	-1679	1552	2118	3899	5379	4648	2221	1072	641	553	1268
5 1933 Federal Report Surplus Deficit	54.0	138	1006	2158	2647	1598	817	99.7	3186	6392	4326	2897	1929	670	2084
6 1934 Federal Report Surplus Deficit	637	2741	4112	4540	4812	3887	4688	4001	3734	3342	373	211	52.7	-217	2693
7 1935 Federal Report Surplus Deficit	-6.30	-331	-51.1	2014	2305	1745	-386	392	2573	2059	2297	2293	145	-2.33	1150
8 1936 Federal Report Surplus Deficit	-26.9	183	-609	-1311	-795	87.0	-551	2531	5541	4057	1367	460	-153	-181	791
9 1937 Federal Report Surplus Deficit	95.3	476	-479	-1520	-1165	-446	-1078	-1189	821	2302	517	732	-33.1	177	0.00
10 1938 Federal Report Surplus Deficit	27.5	227	311	1369	1627	2616	2668	4118	4948	3384	2553	299	-242	362	1736
11 1939 Federal Report Surplus Deficit	64.7	81.1	-724	528	811	610	176	1029	2508	1470	941	320	-194	-106	569
12 1940 Federal Report Surplus Deficit	153	535	463	861	357	1995	1300	256	2807	1545	-190	206	-314	52.2	777
13 1941 Federal Report Surplus Deficit	-110	548	123	-250	145	490	-870	-1347	440	1548	650	848	-69.9	328	265
14 1942 Federal Report Surplus Deficit	-171	730	1586	1450	1542	-141	-521	-314	1368	4544	3096	1386	796	797	1286
15 1943 Federal Report Surplus Deficit	110	-3.83	-44.0	2500	2318	2270	5234	5022	3546	6047	4467	1523	466	232	2289
16 1944 Federal Report Surplus Deficit	-19.4	251	-635	-42.7	-153	-636	-1440	-1542	146	1026	58.5	704	-314	-16.8	-111
17 1945 Federal Report Surplus Deficit	-101	207	-476	-1106	-438	-268	-1297	-1379	2541	4359	226	649	-130	45.9	324
18 1946 Federal Report Surplus Deficit	-55.6	416	424	1183	1719	1620	3778	4521	5228	3451	3165	1940	948	533	1937
19 1947 Federal Report Surplus Deficit	-50.7	880	2611	3481	3158	2825	2202	1041	4563	4026	2817	1095	273	385	2249
20 1948 Federal Report Surplus Deficit	2329	2022	1465	3274	2983	1693	1433	2788	6419	6267	3291	2932	1980	830	2928
21 1949 Federal Report Surplus Deficit	327	568	242	1220	1431	2645	2399	3387	5317	3291	363	115	-555	-112	1494
22 1950 Federal Report Surplus Deficit	-56.8	147	543	3121	3316	3251	3853	2030	4164	6110	5131	2848	1782	792	2644
23 1951 Federal Report Surplus Deficit	993	2315	2848	4324	5073	4128	4285	3311	5188	3752	3961	2110	345	518	3171
24 1952 Federal Report Surplus Deficit	1816	1387	1569	3115	3061	1721	3782	5058	6148	4092	2623	1256	11.7	-163	2532
25 1953 Federal Report Surplus Deficit	24.0	242	-602	165	3919	982	-1215	-413	3334	6444	4224	1480	728	557	1618
26 1954 Federal Report Surplus Deficit	269	869	976	2651	3500	2402	1410	951	4915	5245	4950	3722	3053	2486	2734
27 1955 Federal Report Surplus Deficit	397	1458	919	299	733	-617	-854	-862	2464	6342	4974	2698	1171	414	1538
28 1956 Federal Report Surplus Deficit	544	1924	2702	4215	4373	3988	3624	5565	6237	6005	3634	2327	1549	626	3393

Table 10.1.1
Federal Report Surplus Deficit By Water Year
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Energy-aMW - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
29 1957 Federal Report Surplus Deficit	495	510	1159	1425	784	2152	3388	1386	6616	6280	1704	1353	-107	67.9	2018
30 1958 Federal Report Surplus Deficit	35.6	342	181	2185	2312	1600	571	2032	5731	5125	1404	1128	38.7	138	1740
31 1959 Federal Report Surplus Deficit	268	1438	2218	3776	4504	2176	2777	1072	4046	5441	4273	2600	2006	2880	2928
32 1960 Federal Report Surplus Deficit	3084	2840	2134	2606	2223	1819	4465	2780	2719	4450	2221	1818	28.1	203	2398
33 1961 Federal Report Surplus Deficit	210	811	394	2036	2623	3081	2422	382	4296	5628	1646	1200	286	37.6	1903
34 1962 Federal Report Surplus Deficit	-64.5	425	402	2014	2384	380	1179	4166	3800	3596	1525	1535	485	183	1519
35 1963 Federal Report Surplus Deficit	744	1542	1978	2589	2409	513	-267	-688	2835	4614	2170	1207	164	692	1687
36 1964 Federal Report Surplus Deficit	-32.8	472	345	962	1217	-11.5	773	-108	3902	6500	4684	2623	1788	1299	1822
37 1965 Federal Report Surplus Deficit	914	1215	2874	4528	5293	3939	897	4574	5344	4616	2702	2547	1588	270	3037
38 1966 Federal Report Surplus Deficit	429	608	637	1729	1905	477	1415	418	2126	3393	2012	1562	103	154	1263
39 1967 Federal Report Surplus Deficit	-48.4	168	1146	3302	3569	2610	1022	-635	3707	5847	3733	1893	1123	641	2194
40 1968 Federal Report Surplus Deficit	316	925	674	2193	2905	2836	-909	-814	1981	4642	2462	2070	1582	1733	1798
41 1969 Federal Report Surplus Deficit	1037	2031	1573	3832	4554	2726	3722	4742	6042	4648	2721	816	83.1	265	2833
42 1970 Federal Report Surplus Deficit	388	601	-70.6	2060	2651	993	-711	-738	3308	5468	1428	832	-53.9	-73.0	1360
43 1971 Federal Report Surplus Deficit	35.1	402	506	3918	4976	3814	3554	2859	6215	6326	4248	2871	2349	838	3084
44 1972 Federal Report Surplus Deficit	525	752	969	3819	3884	5649	5233	2193	5929	5958	4370	2996	2639	993	3282
45 1973 Federal Report Surplus Deficit	462	757	595	1638	1952	348	-1543	-1489	361	1612	406	751	-319	-47.3	560
46 1974 Federal Report Surplus Deficit	-23.6	224	1664	4994	5357	4706	4491	4555	5473	6270	5290	3133	2620	915	3517
47 1975 Federal Report Surplus Deficit	-123	211	72.9	1917	2160	2510	-74.0	-112	4412	5968	4913	1943	1286	1083	2055
48 1976 Federal Report Surplus Deficit	1139	2240	3538	3774	4386	3261	4131	2826	6087	4604	4351	3899	3825	3256	3664
49 1977 Federal Report Surplus Deficit	529	291	-522	218	16.7	-622	-1413	-1427	315	496	5.23	730	-126	-464	-70.5
50 1978 Federal Report Surplus Deficit	-396	280	644	1505	1681	1311	3697	912	4255	2996	2687	1499	524	1570	1651
51 1979 Federal Report Surplus Deficit	553	640	-402	881	339	1502	-499	245	3940	1824	118	330	-405	164	786
52 1980 Federal Report Surplus Deficit	67.7	258	-803	959	345	-244	891	1420	5704	4845	1625	304	-247	372	1192
53 1981 Federal Report Surplus Deficit	34.1	723	1987	3347	3360	705	-1344	-549	3924	6008	3692	2794	1993	624	2153
54 1982 Federal Report Surplus Deficit	171	1008	680	2737	4274	5323	3585	1218	5481	6064	5186	2675	2342	1722	3126
55 1983 Federal Report Surplus Deficit	1070	1057	1176	3058	3549	3760	2370	723	4135	4294	4322	2603	2045	1023	2610
56 1984 Federal Report Surplus Deficit	350	2518	1469	2808	2953	3003	2040	3393	3949	5850	4001	2137	594	993	2657

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Energy-aMW - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
57 1985 Federal Report Surplus Deficit	408	1047	563	1232	1273	626	1796	2045	3284	1707	479	-176	-616	172	1022
58 1986 Federal Report Surplus Deficit	632	1508	758	2200	3099	4353	3833	3092	3083	4322	1120	998	-145	15.2	2071
59 1987 Federal Report Surplus Deficit	-129	892	649	589	147	1123	-421	-87.2	3398	1798	-13.6	287	-402	-62.2	676
60 1988 Federal Report Surplus Deficit	-58.5	169	-863	-1194	-340	-163	-1126	-499	618	1672	1114	748	-5.58	82.3	48.3
61 1989 Federal Report Surplus Deficit	-63.0	447	131	-394	-1052	1270	1423	3967	3156	1964	677	414	-126	82.1	758
62 1990 Federal Report Surplus Deficit	93.0	722	1196	1797	3054	1942	1180	3124	3102	4470	2148	1958	1041	115	1850
63 1991 Federal Report Surplus Deficit	-89.6	2431	1703	3231	3144	2223	1553	569	3339	4446	4078	2705	1393	213	2316
64 1992 Federal Report Surplus Deficit	-78.2	398	-798	174	271	404	-1133	-722	2352	1229	-97.5	426	-251	-180	236
65 1993 Federal Report Surplus Deficit	-71.5	358	-403	-871	-1233	663	-161	-1055	4488	3418	1254	711	29.3	147	633
66 1994 Federal Report Surplus Deficit	75.5	556	-261	-749	143	-192	-1012	-12.7	1640	1482	894	601	-176	33.7	275
67 1995 Federal Report Surplus Deficit	-17.3	-9.52	-287	710	1708	2303	271	-991	3360	4614	2334	1041	60.0	635	1292
68 1996 Federal Report Surplus Deficit	1018	3111	4709	4800	5031	5197	3833	5175	5304	5107	4167	2464	1573	645	3798
69 1997 Federal Report Surplus Deficit	227	937	1614	4884	5161	5112	4286	5257	6252	6102	4507	2499	2434	1638	3634
70 1998 Federal Report Surplus Deficit	2560	1893	590	1267	2834	1354	-396	-536	5580	5645	2464	2314	1113	144	2130
71 1999 Federal Report Surplus Deficit	52.6	144	1470	3683	3551	4647	1927	2436	4116	5743	4640	3593	2649	949	2859
72 2000 Federal Report Surplus Deficit	201	2684	2032	1948	2266	2113	3237	4077	3676	1445	2069	1723	-238	31.5	1900
73 2001 Federal Report Surplus Deficit	108	234	-598	-83.7	-190	-403	-1472	-1454	558	362	234	804	-253	-401	-113
74 2002 Federal Report Surplus Deficit	-477	177	91.8	-557	105	393	934	2520	2610	5258	3474	756	226	153	1118
75 2003 Federal Report Surplus Deficit	160	460	-504	-338	661	2052	444	156	1514	4574	817	-3.53	-428	-330	757
76 2004 Federal Report Surplus Deficit	8.40	815	594	90.8	-225	498	181	-133	1986	2936	812	246	97.7	899	718
77 2005 Federal Report Surplus Deficit	522	661	939	1399	2142	519	-1281	-891	2112	2457	1204	746	-125	-88.8	921
78 2006 Federal Report Surplus Deficit	4.29	861	607	2685	3281	1920	4220	3808	5270	5225	1792	448	-317	-394	2100
79 2007 Federal Report Surplus Deficit	-72.1	876	715	2005	1496	3202	1653	126	3867	3289	1873	399	-500	-606	1459
80 2008 Federal Report Surplus Deficit	143	700	-117	208	579	654	-223	-861	4261	6355	3263	844	571	194	1368

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Table 10.1.1
Federal Report Surplus Deficit By Water Year
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Energy-aMW - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
1 1929 Federal Report Surplus Deficit	147	347	-543	-512	-179	-25.4	-1001	-1031	-320	2631	-22.7	695	35.0	228	88.1
2 1930 Federal Report Surplus Deficit	179	482	-530	-1289	-155	-70.1	-321	-493	-175	576	920	890	105	136	12.1
3 1931 Federal Report Surplus Deficit	191	454	-351	-1206	-219	-9.56	-498	-1140	8.09	348	852	1130	125	174	4.22
4 1932 Federal Report Surplus Deficit	-55.6	80.9	-450	-565	-1685	1785	2325	4280	4851	4133	2334	1211	688	654	1293
5 1933 Federal Report Surplus Deficit	160	241	1091	2217	2656	1770	1141	528	2532	6268	4216	3036	1974	771	2100
6 1934 Federal Report Surplus Deficit	742	2823	4287	4857	4793	3990	4730	4283	3338	3013	476	351	108	-116	2730
7 1935 Federal Report Surplus Deficit	99.4	-228	55.0	2068	2316	1940	-150	909	1889	1546	2409	2432	200	98.2	1152
8 1936 Federal Report Surplus Deficit	78.9	286	-503	-1209	-802	219	-268	3117	5040	3611	1469	600	-97.3	-80.2	822
9 1937 Federal Report Surplus Deficit	201	579	-373	-1417	-1172	-314	-868	-935	204	1804	622	871	22.2	278	0.00
10 1938 Federal Report Surplus Deficit	133	330	417	1473	1664	2789	2864	4601	4408	2915	2666	439	-186	463	1758
11 1939 Federal Report Surplus Deficit	170	184	-618	579	867	742	442	1508	1865	939	1046	460	-138	-5.61	573
12 1940 Federal Report Surplus Deficit	259	638	569	964	350	2215	1556	778	2162	1033	-77.4	355	-259	153	793
13 1941 Federal Report Surplus Deficit	-4.07	651	229	-148	144	616	-642	-1137	-186	1044	752	987	-14.6	428	259
14 1942 Federal Report Surplus Deficit	-65.6	833	1705	1552	1536	-9.36	-246	222	744	4092	3223	1491	819	898	1300
15 1943 Federal Report Surplus Deficit	216	99.0	62.1	2602	2339	2671	5295	5234	2931	5795	4579	1662	511	332	2323
16 1944 Federal Report Surplus Deficit	86.4	354	-529	5.66	-96.7	-504	-1188	-1326	-472	517	172	854	-259	83.7	-114
17 1945 Federal Report Surplus Deficit	5.13	310	-370	-1004	-444	-136	-1064	-1145	1921	3901	337	788	-74.8	146	326
18 1946 Federal Report Surplus Deficit	50.2	519	530	1286	1712	1907	3912	4974	4980	2978	3278	2080	1004	633	1987
19 1947 Federal Report Surplus Deficit	55.0	983	2840	3570	3283	2979	2370	1518	4154	3619	2932	1234	328	485	2298
20 1948 Federal Report Surplus Deficit	2435	2125	1537	3358	2958	1817	1768	3238	6238	6078	3403	3072	2025	930	2994
21 1949 Federal Report Surplus Deficit	433	671	348	1322	1424	2960	2698	3780	4932	2852	470	254	-500	-11.3	1541
22 1950 Federal Report Surplus Deficit	49.0	250	649	3260	3590	3375	3943	2476	3559	6017	5057	2988	1827	892	2685
23 1951 Federal Report Surplus Deficit	1099	2420	2952	4649	5239	4249	4414	3634	4751	3289	4000	2250	400	619	3205
24 1952 Federal Report Surplus Deficit	1921	1490	1642	3206	3064	1864	4095	5381	6000	3694	2732	1395	56.9	-62.8	2580
25 1953 Federal Report Surplus Deficit	130	344	-496	208	4049	1133	-949	31.4	2664	6152	4341	1620	773	657	1639
26 1954 Federal Report Surplus Deficit	374	972	1075	2710	3550	2616	1625	1425	4681	5131	4779	3842	3098	2587	2784
27 1955 Federal Report Surplus Deficit	502	1561	1012	402	726	-485	-573	-537	1793	6285	4887	2838	1216	515	1556
28 1956 Federal Report Surplus Deficit	649	2027	2831	4451	4482	4232	3668	5599	6190	5932	3752	2466	1594	726	3487

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Energy-aMW - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
29 1957 Federal Report Surplus Deficit	600	613	1233	1529	774	2460	3598	1878	6296	6208	1812	1492	-52.2	168	2101
30 1958 Federal Report Surplus Deficit	141	444	288	2287	2297	1733	837	2502	5330	4843	1511	1268	94.0	239	1783
31 1959 Federal Report Surplus Deficit	373	1541	2362	4174	4345	2304	2955	1533	3764	5280	4291	2734	2047	2981	2992
32 1960 Federal Report Surplus Deficit	3206	2925	2213	2556	2385	2019	4526	3129	2076	4026	2337	1957	73.2	304	2401
33 1961 Federal Report Surplus Deficit	315	914	500	2138	2608	3188	2669	835	3949	5372	1755	1339	341	138	1948
34 1962 Federal Report Surplus Deficit	41.2	527	508	1977	2548	523	1357	4525	3133	3127	1637	1674	540	284	1517
35 1963 Federal Report Surplus Deficit	849	1645	2068	2732	2398	646	-1.53	-306	2161	4189	2282	1347	220	792	1693
36 1964 Federal Report Surplus Deficit	72.9	575	451	1010	1273	131	1014	381	3270	6222	4560	3054	1834	1399	1841
37 1965 Federal Report Surplus Deficit	1020	1318	3051	4793	5502	4189	1054	4956	5159	4342	2836	2686	1644	370	3135
38 1966 Federal Report Surplus Deficit	534	711	743	1736	2015	615	1666	913	1448	2900	2124	1702	158	255	1267
39 1967 Federal Report Surplus Deficit	57.3	271	1236	3431	3646	2750	1233	-296	3103	5828	3764	2032	1168	741	2233
40 1968 Federal Report Surplus Deficit	421	1028	780	2295	2893	2954	-633	-572	1287	4265	2571	2209	1638	1833	1796
41 1969 Federal Report Surplus Deficit	1142	2135	1647	4111	4367	3103	3906	4997	5908	4367	2845	955	138	365	2904
42 1970 Federal Report Surplus Deficit	494	704	35.5	2162	2637	1192	-492	-459	2639	5183	1542	972	-8.79	27.5	1374
43 1971 Federal Report Surplus Deficit	141	505	612	4546	4778	4184	3681	3237	6180	6217	4451	3010	2394	939	3217
44 1972 Federal Report Surplus Deficit	631	855	1075	4062	4728	5283	5215	2636	5782	5904	4364	3136	2684	1093	3377
45 1973 Federal Report Surplus Deficit	568	860	702	1740	1945	480	-1337	-1303	-257	1107	509	890	-263	53.2	550
46 1974 Federal Report Surplus Deficit	82.1	326	1813	5364	5433	4905	4595	4903	5248	6074	5131	3272	2665	1016	3582
47 1975 Federal Report Surplus Deficit	-17.4	314	179	1978	2219	2726	128	386	3788	5694	4982	2082	1331	1183	2084
48 1976 Federal Report Surplus Deficit	1266	2343	3712	3955	4487	3419	4378	3238	5919	4231	4257	4128	3851	3357	3725
49 1977 Federal Report Surplus Deficit	635	394	-416	266	75.0	-490	-1212	-1254	-233	-31.2	118	880	-70.8	-363	-72.6
50 1978 Federal Report Surplus Deficit	-290	383	792	1597	1721	1487	3866	1423	3650	2509	2802	1638	569	1671	1669
51 1979 Federal Report Surplus Deficit	659	743	-296	983	332	1633	-185	666	3310	1322	226	470	-349	265	794
52 1980 Federal Report Surplus Deficit	173	361	-697	1061	338	-112	1139	1944	5218	4352	1734	444	-192	472	1215
53 1981 Federal Report Surplus Deficit	140	826	2068	3620	3439	837	-1053	-160	3230	5818	3750	2934	2038	725	2188
54 1982 Federal Report Surplus Deficit	277	1111	786	2839	4586	5359	3705	1717	5000	5768	5113	3107	2387	1823	3167
55 1983 Federal Report Surplus Deficit	1176	1160	1273	3213	3734	3947	2613	1212	3595	3922	4348	2742	2090	1123	2648
56 1984 Federal Report Surplus Deficit	455	2619	1561	2948	3015	3324	2272	3924	3526	5478	4123	2276	639	1094	2716

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Energy-aMW - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
57 1985 Federal Report Surplus Deficit	514	1150	669	1286	1330	758	2022	2536	2635	1209	582	-37.0	-561	272	1027
58 1986 Federal Report Surplus Deficit	738	1612	864	2302	3440	4415	3995	3491	2491	3782	1225	1138	-89.9	116	2089
59 1987 Federal Report Surplus Deficit	-23.4	995	755	691	140	1254	-95.7	308	2774	1280	89.0	426	-347	38.3	682
60 1988 Federal Report Surplus Deficit	47.2	272	-757	-1091	-347	-30.9	-868	-2.48	-2.98	1166	1219	898	49.7	183	57.7
61 1989 Federal Report Surplus Deficit	42.8	550	237	-277	-1059	1513	1639	4310	2519	1471	796	564	-70.8	183	775
62 1990 Federal Report Surplus Deficit	199	825	1275	1847	3094	2074	1396	3522	2486	4257	2257	2097	1086	216	1869
63 1991 Federal Report Surplus Deficit	16.1	2535	1777	3475	3242	2378	1743	989	2723	4061	4042	3135	1439	313	2345
64 1992 Federal Report Surplus Deficit	27.6	501	-692	276	264	536	-894	-424	1728	705	5.09	565	-196	-79.9	233
65 1993 Federal Report Surplus Deficit	34.3	461	-297	-769	-1240	795	110	-650	4036	2857	1458	855	77.6	247	661
66 1994 Federal Report Surplus Deficit	181	659	-155	-647	136	-60.5	-758	490	1001	963	998	750	-121	134	281
67 1995 Federal Report Surplus Deficit	88.4	93.3	-181	812	1726	2442	557	-575	2775	4246	2452	1180	115	735	1314
68 1996 Federal Report Surplus Deficit	1123	3187	5058	5135	5223	5331	3952	5454	4865	4760	4208	2603	1628	745	3864
69 1997 Federal Report Surplus Deficit	333	1040	1714	4950	5352	5209	4361	5495	6029	6013	4461	2932	2479	1739	3694
70 1998 Federal Report Surplus Deficit	2657	1995	696	1369	2848	1487	-128	-106	5213	5222	2712	2160	1169	245	2163
71 1999 Federal Report Surplus Deficit	158	247	1542	3912	4287	4238	2216	2784	3544	5483	4519	3936	2694	1050	2892
72 2000 Federal Report Surplus Deficit	307	2785	2111	2051	2257	2257	3407	4412	3014	945	2177	1862	-182	132	1893
73 2001 Federal Report Surplus Deficit	214	337	-492	-89.8	-65.9	-271	-1242	-1252	-64.5	-158	337	943	-198	-301	-119
74 2002 Federal Report Surplus Deficit	-371	280	198	-455	98.2	525	1219	2915	1968	5071	3627	896	271	254	1153
75 2003 Federal Report Surplus Deficit	266	563	-398	-236	654	2190	728	650	872	4154	920	136	-373	-229	772
76 2004 Federal Report Surplus Deficit	114	918	700	193	-232	629	473	319	1309	2452	921	385	153	1000	725
77 2005 Federal Report Surplus Deficit	627	764	1025	1501	2135	651	-1039	-551	1470	1933	1311	885	-69.6	11.7	914
78 2006 Federal Report Surplus Deficit	110	964	713	2740	3371	2052	4434	4250	4871	5094	1897	587	-262	-294	2153
79 2007 Federal Report Surplus Deficit	33.6	980	821	2107	1489	3309	1912	604	3202	2804	1975	539	-444	-505	1462
80 2008 Federal Report Surplus Deficit	249	803	-11.1	310	572	786	45.9	-479	3784	6412	3361	983	616	294	1431

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Table 10.1.2
Federal Report Surplus Deficit By Water Year
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HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
1 1929 Federal Report Surplus Deficit	160351	275936	-69044	-5110	133620	109813	-244063	-262393	231581	1552283	168005	276560	149672	196508	2673720
2 1930 Federal Report Surplus Deficit	185785	348628	-51445	-425399	113708	93686	-105431	-195768	380845	785616	815081	334549	175372	166725	2621953
3 1931 Federal Report Surplus Deficit	183399	323381	22182	-382826	108937	131283	-142042	-299866	497142	657414	784442	406381	186543	187145	2663514
4 1932 Federal Report Surplus Deficit	47689	147829	-23140	-50309	-649978	818113	569020	772659	2285941	1960251	1390757	416057	383442	421592	8489923
5 1933 Federal Report Surplus Deficit	173067	187065	791856	1158729	1377009	1047817	226632	89779	1421139	2453102	1765392	656879	654353	484015	12486834
6 1934 Federal Report Surplus Deficit	494051	1324905	1645395	1915968	1854265	1987656	1020841	745257	1439899	1288105	547236	184925	212923	43236	14704662
7 1935 Federal Report Surplus Deficit	142718	-24998	231862	1042333	1302323	1174408	-46123	165802	1182528	1140567	1343001	603330	225826	139153	8622731
8 1936 Federal Report Surplus Deficit	127908	257363	-56277	-389467	-175426	207465	-101778	675546	2351688	1663057	1095121	257911	117417	43927	6074457
9 1937 Federal Report Surplus Deficit	193434	389508	4822	-495034	-362719	-24875	-217977	-235583	524250	1161881	638541	326985	143973	239826	2287032
10 1938 Federal Report Surplus Deficit	161850	246351	396039	1086192	958014	1453630	648226	886256	2031305	1708525	1451363	206787	113453	327753	11675745
11 1939 Federal Report Surplus Deficit	169034	204625	-104497	649265	641952	454195	84896	337529	1398325	903117	869937	219167	107520	85432	6020499
12 1940 Federal Report Surplus Deficit	218015	398601	483382	818897	374821	1138081	379316	145016	1409924	825006	201009	188777	70926	168642	6820413
13 1941 Federal Report Surplus Deficit	67738	403109	291193	185359	260628	446348	-155033	-280430	386309	979342	694185	358906	137275	286122	4061051
14 1942 Federal Report Surplus Deficit	22556	481507	1056931	1107593	992442	100425	-88581	-12679	883599	1898939	1634495	471160	386182	495412	9429981
15 1943 Federal Report Surplus Deficit	202715	110571	173272	1466417	1235101	1223351	1171054	1099122	1698474	2435831	2033538	516647	322360	252920	13941375
16 1944 Federal Report Surplus Deficit	124209	272395	-80562	287841	150922	-120518	-318455	-366461	231537	745689	334892	328496	54797	132697	1777478
17 1945 Federal Report Surplus Deficit	72890	259269	2391	-281080	-24407	54126	-263548	-293892	1448689	1889663	374850	309248	118895	156002	3823097
18 1946 Federal Report Surplus Deficit	97071	333169	423360	954305	1020937	872750	881461	918733	1989949	1517554	1595076	590552	479509	397862	12072288
19 1947 Federal Report Surplus Deficit	95310	530452	1378408	1609592	1641863	1564498	546151	310666	2089970	1662011	1490362	412474	274288	332565	13938611
20 1948 Federal Report Surplus Deficit	1324587	1080155	994344	1665965	1563848	1054440	357896	659794	2476908	2429454	1701468	682185	681398	536682	17209125
21 1949 Federal Report Surplus Deficit	323914	417766	362835	902465	927878	1433184	589290	754449	2480059	1520915	512342	155033	-1168	82883	10461848
22 1950 Federal Report Surplus Deficit	108067	209883	528433	1422013	1724536	1758466	903303	502423	1773582	2357669	2084431	700135	672557	523737	15269236
23 1951 Federal Report Surplus Deficit	634033	1181040	1352637	1857220	2041462	2053598	979429	720701	2063822	1634681	1759914	624024	306455	384535	17593552
24 1952 Federal Report Surplus Deficit	1055733	795174	1054366	1494840	1629024	1072475	863553	1049716	2380656	1837035	1499669	454139	192022	51471	15429874
25 1953 Federal Report Surplus Deficit	143070	274369	-52640	389469	1840376	676980	-264015	-43798	1558302	2514915	1936442	519213	402300	414714	10309697
26 1954 Federal Report Surplus Deficit	292802	547106	768726	1331499	1730007	1394778	375508	274025	1958447	2033167	2002419	771246	791174	1331526	15602432
27 1955 Federal Report Surplus Deficit	362636	856245	742805	518816	628294	-105817	-162381	-173371	1452062	2465810	2016363	680468	507102	342558	10131588
28 1956 Federal Report Surplus Deficit	442430	1027782	1375771	1928291	1978966	1901403	851309	1058566	2387702	2328307	1709332	627807	622429	433823	18673918

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HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
29 1957 Federal Report Surplus Deficit	404043	389984	849181	1027584	586102	1169556	816142	369486	2603001	2416701	1259183	491304	160008	177702	12719976
30 1958 Federal Report Surplus Deficit	139906	318874	299842	1224745	1324997	1033570	209569	500849	2541364	2032497	1115425	434792	205066	221861	11603357
31 1959 Federal Report Surplus Deficit	286166	790387	1263287	1806381	1899887	1301375	670153	330699	1572163	2087673	1844904	667619	692607	1466457	16679758
32 1960 Federal Report Surplus Deficit	1628758	1388688	1123372	1304100	1305740	1128082	1079906	629662	1352931	1889325	1336202	572308	202923	260659	15202654
33 1961 Federal Report Surplus Deficit	261906	519520	448814	1072520	1491084	1759338	605323	170791	1685989	2159445	1170382	449731	279275	165339	12239457
34 1962 Federal Report Surplus Deficit	108765	346614	458591	1168635	1374294	357592	304018	866183	1673149	1686176	1170504	525387	345956	236304	10622169
35 1963 Federal Report Surplus Deficit	524047	864286	1155765	1213118	1349544	449759	-4016	-134769	1619171	1971302	1399702	447345	225381	474954	11555589
36 1964 Federal Report Surplus Deficit	108460	353186	422158	907422	872919	161816	231990	19721	1736755	2545191	1971789	668689	669367	747205	11416669
37 1965 Federal Report Surplus Deficit	626031	737583	1441602	1984074	2117934	1933181	258711	955703	2029277	2124985	1618370	665036	636915	254190	17383592
38 1966 Federal Report Surplus Deficit	356916	444711	558509	1150324	1197019	445922	431210	187444	1194927	1441212	1285962	534861	209231	222022	9660270
39 1967 Federal Report Surplus Deficit	103875	219156	862995	1530827	1723130	1488946	285406	-97929	1592495	2274697	1786181	583954	524001	460533	13338268
40 1968 Federal Report Surplus Deficit	297463	584894	585248	1193245	1598413	1604382	-182368	-154510	1126183	1932986	1417971	583988	605545	942461	12135902
41 1969 Federal Report Surplus Deficit	672918	1093652	1033193	1839247	1915274	1465622	874246	887919	2408923	1812269	1464726	349367	219862	292523	16329742
42 1970 Federal Report Surplus Deficit	354016	445382	203521	1354958	1461436	666451	-130463	-149154	1612452	2357555	1056887	354226	151725	85029	9824021
43 1971 Federal Report Surplus Deficit	127877	312806	465618	1800976	2009986	1996946	845178	645266	2370244	2448399	1942716	713738	709184	552855	16941789
44 1972 Federal Report Surplus Deficit	389047	479497	726894	1716468	1904702	2379567	1070494	509040	2268153	2295765	1876783	722517	739576	607028	17685532
45 1973 Federal Report Surplus Deficit	354445	499065	542773	1187093	1173914	370925	-338061	-350299	270061	940879	545402	339308	63297	106400	5705202
46 1974 Federal Report Surplus Deficit	109583	202111	1085288	2001565	1963401	2202275	1020372	886131	2090705	2416580	2134128	742290	741565	592875	18188869
47 1975 Federal Report Surplus Deficit	60910	258713	258343	1171277	1297141	1453182	28557	36942	1865835	2437694	2174308	620404	542261	643610	12849177
48 1976 Federal Report Surplus Deficit	683798	1180270	1568274	1811966	1882394	1761594	944202	662218	2438195	1937733	1811876	798656	889558	1512796	19883529
49 1977 Federal Report Surplus Deficit	403784	284868	-23924	473148	233377	-116043	-306227	-335321	348217	474484	330293	343298	113399	-118416	2104938
50 1978 Federal Report Surplus Deficit	-90617	270965	524514	1102860	971062	756514	859123	285187	1763038	1478024	1618159	530618	339826	892490	11301764
51 1979 Federal Report Surplus Deficit	436336	466231	54852	828915	403784	996670	-75092	116413	1991794	1078019	367965	213870	41907	229827	7151491
52 1980 Federal Report Surplus Deficit	178908	281464	-146000	868036	358189	34870	255998	425226	2348555	2029445	1217076	203431	103596	318393	8477188
53 1981 Federal Report Surplus Deficit	150881	488635	1099316	1424930	1585480	563581	-282014	-98885	1734358	2336351	1700122	658468	667302	456634	12485157
54 1982 Federal Report Surplus Deficit	240161	641029	585424	1508233	1961522	2420061	847730	338726	2279371	2433759	2125486	706926	730208	953586	17772221
55 1983 Federal Report Surplus Deficit	665410	648902	861977	1524695	1692470	1910724	577446	240665	2017534	2077566	1952482	692072	712708	623550	16198203
56 1984 Federal Report Surplus Deficit	290296	1279067	1000590	1492348	1559466	1559588	489151	775131	2025569	2526581	1874463	646470	361149	594458	16474328

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57 1985 Federal Report Surplus Deficit	314517	594193	512829	997824	864388	493047	444861	491496	1693187	1030148	625350	58386	-12428	193081	8300880
58 1986 Federal Report Surplus Deficit	462233	837158	620092	1311840	1532221	2137478	977920	752740	1608606	1904920	963326	400961	125739	130973	13766208
59 1987 Federal Report Surplus Deficit	44838	541833	555782	678339	302127	812936	-39498	69183	1516174	884371	296321	196583	39629	99250	5997869
60 1988 Federal Report Surplus Deficit	101049	237467	-173187	-316321	32691	111639	-227313	-39479	541019	972271	987185	340319	162886	183036	2913262
61 1989 Federal Report Surplus Deficit	109989	352213	291093	94780	-320886	682776	352514	834402	1537528	1157924	725453	231645	119115	173214	6341758
62 1990 Federal Report Surplus Deficit	184880	483228	864245	1082525	1459651	1198498	402924	671122	1365369	1751658	1385096	591454	479146	194385	12114180
63 1991 Federal Report Surplus Deficit	91534	1219901	1018159	1380538	1653160	1383843	403516	189552	1507801	1792909	1750813	655748	595711	239804	13882988
64 1992 Federal Report Surplus Deficit	94576	319883	-162938	411034	360049	401500	-231241	-121593	1165975	808162	236304	242689	79988	33887	3638275
65 1993 Federal Report Surplus Deficit	107945	336509	57862	-150878	-403724	492987	-11408	-225637	2154380	1767314	944540	303254	154209	195659	5723012
66 1994 Federal Report Surplus Deficit	180483	424154	115642	-68754	276341	95651	-192364	134660	1086513	854351	843810	292108	101493	152546	4296632
67 1995 Federal Report Surplus Deficit	134505	158709	96211	686720	950161	1427348	124800	-238897	1755303	2016562	1514129	399234	207857	442057	9674697
68 1996 Federal Report Surplus Deficit	670898	1472195	1765605	2031588	2069105	2308023	896053	1029100	2160583	2196926	1850953	650066	624267	451880	20177243
69 1997 Federal Report Surplus Deficit	269995	563350	1080995	2062105	2041803	2373442	945676	999545	2385846	2349533	1921418	697482	731826	915146	19338162
70 1998 Federal Report Surplus Deficit	1429718	1039235	528692	1043004	1486231	895001	-31073	-91040	2539127	2356284	1574246	624395	506671	187738	14088229
71 1999 Federal Report Surplus Deficit	144105	186805	1010002	1732753	1802423	2228583	477574	576359	1857596	2331738	1902485	771036	758681	610252	16390392
72 2000 Federal Report Surplus Deficit	239496	1308420	1114533	1168838	1350458	1250678	764278	841656	1641051	863810	1275047	550878	103091	151005	12623239
73 2001 Federal Report Surplus Deficit	185170	265699	-51207	273579	131514	-12289	-316312	-330508	490768	393454	467457	354562	71613	-74968	1848533
74 2002 Federal Report Surplus Deficit	-152634	244577	264872	9234	202803	344970	247271	612933	1309504	2058353	1640184	334109	257089	223829	7597096
75 2003 Federal Report Surplus Deficit	228390	383008	2024	126753	549145	1254922	170953	133414	951487	1937270	796453	112238	35222	-38309	6642970
76 2004 Federal Report Surplus Deficit	151037	540689	540806	372338	71109	428778	127967	69368	1230559	1369686	777140	177944	172894	541006	6571321
77 2005 Federal Report Surplus Deficit	421874	478735	757277	981819	1185980	462539	-266349	-181321	1237332	1137252	1008728	326978	118851	55153	7724847
78 2006 Federal Report Surplus Deficit	150153	567286	533533	1361446	1678562	1146310	957942	816491	2470677	2024735	1265231	250839	86371	-88842	13220733
79 2007 Federal Report Surplus Deficit	89281	524107	614642	1156567	1017399	1799056	525080	125459	1724131	1374101	1248920	237945	12619	-203047	10246261
80 2008 Federal Report Surplus Deficit	217914	478959	166380	458800	516743	484526	-14518	-174447	2121437	2467724	1720942	359968	362625	233992	9401045

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1 1929 Federal Report Surplus Deficit	179774	359199	-88589	63182	107637	103179	-208559	-218270	23642	1281451	134123	367138	84912	227663	2416483
2 1930 Federal Report Surplus Deficit	205832	436524	-69481	-348463	98579	88948	-63154	-107833	135599	493096	771868	426465	110739	196053	2374773
3 1931 Federal Report Surplus Deficit	202761	404906	3118	-312081	80568	127650	-88630	-254146	249150	389795	731488	498668	121231	219532	2374009
4 1932 Federal Report Surplus Deficit	66995	232922	-40541	22068	-655624	896076	602264	855830	2364886	1688252	1244100	510097	315960	469730	8573015
5 1933 Federal Report Surplus Deficit	190831	271071	754990	1343729	1296518	1057320	296770	186658	1379010	2256979	1575195	747928	587169	538357	12482525
6 1934 Federal Report Surplus Deficit	527078	1422738	1700539	2104684	1787932	1910115	1014639	809679	1528077	1058393	512221	269143	147783	73665	14866687
7 1935 Federal Report Surplus Deficit	162643	59459	219147	1200223	1227332	1190936	628	270429	1100842	816533	1187155	691542	157583	170424	8454877
8 1936 Federal Report Surplus Deficit	146586	342062	-74819	-299526	-199109	211498	-45149	804881	2456327	1410883	998392	348204	53948	74815	6228993
9 1937 Federal Report Surplus Deficit	211843	474007	-11717	-412071	-385620	-32204	-178506	-184310	354576	946070	606324	418841	80043	271117	2158393
10 1938 Federal Report Surplus Deficit	180588	328329	380721	1199938	918259	1496561	690029	989832	2085599	1344015	1296889	295139	41786	368814	11616500
11 1939 Federal Report Surplus Deficit	187606	292784	-114851	679190	635010	491396	142847	443986	1281438	646529	828954	307456	43288	116171	5981803
12 1940 Federal Report Surplus Deficit	236532	480570	455133	912395	348822	1198853	425532	253088	1338610	586183	168845	273702	5914	202087	6886268
13 1941 Federal Report Surplus Deficit	87192	486059	269594	247907	239405	449574	-112139	-237028	165638	711623	663732	453011	74593	331858	3831017
14 1942 Federal Report Surplus Deficit	44719	571210	1058225	1201123	940275	101549	-48043	107982	699299	1628743	1476365	561666	315065	549075	9207254
15 1943 Federal Report Surplus Deficit	223661	191262	157434	1598997	1216876	1318002	1187798	1141666	1656812	2211358	1904319	612924	255664	291462	13968232
16 1944 Federal Report Surplus Deficit	145053	356896	-89446	322063	153269	-130094	-267882	-318410	-54963	407072	304668	420526	-9855	162425	1401321
17 1945 Federal Report Surplus Deficit	92388	342363	-16521	-207035	-38982	51022	-229271	-248902	1285813	1656314	349074	399359	55192	185841	3676656
18 1946 Federal Report Surplus Deficit	116551	417399	409749	1035530	969807	950086	863650	1008978	2084236	1241847	1451011	678110	416739	443739	12087433
19 1947 Federal Report Surplus Deficit	116778	608340	1433666	1790249	1650591	1615066	586251	413197	2168622	1448361	1336621	505731	206895	373206	14253575
20 1948 Federal Report Surplus Deficit	1420847	1176237	956780	1870704	1494939	1043521	435610	739537	2625423	2182134	1541627	774626	614853	592534	17469372
21 1949 Federal Report Surplus Deficit	352062	501940	352397	1027236	865781	1490377	655183	856590	2511163	1307927	479525	236355	-70242	112514	10678808
22 1950 Federal Report Surplus Deficit	127696	292793	514775	1624503	1724843	1711191	924323	601392	1756937	2186031	1884490	789555	608838	573036	15320403
23 1951 Federal Report Surplus Deficit	669038	1280221	1354908	2115219	2033679	2110389	1005890	803604	2194774	1381569	1546084	713144	236620	429731	17874870
24 1952 Federal Report Surplus Deficit	1119893	878562	1023437	1629341	1561249	1089670	931300	1113319	2642288	1615389	1344146	548289	122295	83321	15702499
25 1953 Federal Report Surplus Deficit	162966	359758	-67397	436320	1815019	704215	-206558	55156	1484988	2239919	1791637	614548	335781	458786	10185137
26 1954 Federal Report Surplus Deficit	315236	625427	747845	1464929	1682275	1438375	420656	376982	2103052	1809813	1771645	850897	728451	1416589	15752170
27 1955 Federal Report Surplus Deficit	389980	942101	711528	575177	590577	-118223	-106516	-96321	1286260	2271131	1819776	769578	450847	384062	9869957
28 1956 Federal Report Surplus Deficit	470224	1122717	1398225	2144021	1956185	1951808	861429	1071019	2595773	2124841	1583710	718513	560040	479983	19038489

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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
29 1957 Federal Report Surplus Deficit	432384	476343	817695	1193652	549482	1241279	848140	469196	2819286	2225603	1160551	584005	91920	209776	13119312
30 1958 Federal Report Surplus Deficit	160017	400780	296270	1425914	1272692	1025448	267972	610157	2633571	1814489	1045717	528876	138230	253463	11873598
31 1959 Federal Report Surplus Deficit	309626	875392	1293486	2028744	1813469	1306663	710890	434349	1683239	1902501	1653398	758830	622061	1566791	16959441
32 1960 Federal Report Surplus Deficit	1737778	1480718	1098687	1480066	1273832	1181082	1081069	697329	1267995	1650552	1187789	660983	127469	296672	15222020
33 1961 Federal Report Surplus Deficit	281206	598808	429949	1275299	1407670	1757735	664566	269620	1803212	1904490	1033596	541359	213375	195715	12376601
34 1962 Federal Report Surplus Deficit	129403	423120	445349	1363394	1368822	372033	337862	942152	1639525	1391321	1101794	619643	279060	267546	10681024
35 1963 Federal Report Surplus Deficit	558016	948708	1145614	1407438	1300042	461745	49545	-46413	1437652	1722437	1256080	541193	160484	520697	11463238
36 1964 Federal Report Surplus Deficit	128412	430694	400422	962630	857038	165477	271704	134095	1698740	2261230	1742673	772162	595693	799744	11220715
37 1965 Federal Report Surplus Deficit	667032	820394	1492700	2165093	2101064	1984518	285956	1040567	2223470	1774153	1464825	754131	575694	295404	17645000
38 1966 Federal Report Surplus Deficit	385860	528034	538298	1321922	1181022	459922	469518	309713	1047367	1191803	1130874	622597	142054	253024	9582008
39 1967 Federal Report Surplus Deficit	123711	303380	835375	1683410	1663949	1496892	330110	-11462	1567465	2091871	1584775	672356	460785	508663	13311280
40 1968 Federal Report Surplus Deficit	322789	669899	576566	1380982	1554455	1606974	-126874	-98874	993353	1714782	1266886	673840	543232	1004225	12082234
41 1969 Federal Report Surplus Deficit	710223	1188610	998644	2028440	1828404	1601558	914945	932359	2622537	1586996	1310405	438817	151851	322075	16635865
42 1970 Federal Report Surplus Deficit	377578	526658	197720	1502946	1401844	711749	-93116	-87699	1540344	2135215	1025886	445641	83811	116621	9885199
43 1971 Federal Report Surplus Deficit	147456	392054	453985	2110939	1971987	2086142	867579	723016	2705897	2242627	1827379	804755	640822	598911	17573550
44 1972 Federal Report Surplus Deficit	422929	556608	724217	1954424	1960317	2242182	1056039	603281	2430101	2105098	1658743	813895	673106	657274	17858214
45 1973 Federal Report Surplus Deficit	386950	578362	544982	1330483	1116686	372402	-303809	-314372	33900	691175	513008	429943	-1016	135761	5514457
46 1974 Federal Report Surplus Deficit	129136	271334	1094070	2193658	1966194	2242476	1058263	963562	2193951	2176089	1900532	830080	672470	641382	18333197
47 1975 Federal Report Surplus Deficit	81921	342093	252533	1351852	1266534	1520947	62821	162537	1868096	2189737	1965941	711231	481636	693903	12951783
48 1976 Federal Report Surplus Deficit	740949	1274437	1608470	2018828	1867156	1813242	1005802	748409	2643488	1734012	1623123	868021	831929	1717219	20495087
49 1977 Federal Report Surplus Deficit	432042	367221	-28453	494283	235450	-126291	-270725	-302548	120766	144423	295545	434651	49585	-86007	1759940
50 1978 Federal Report Surplus Deficit	-66920	353994	543469	1180428	945893	810120	901675	395741	1748974	1158213	1461025	626387	272838	948598	11280435
51 1979 Federal Report Surplus Deficit	466136	547815	51291	918833	376393	1004456	-9449	205644	1913266	819153	338872	302648	-24528	260622	7171151
52 1980 Federal Report Surplus Deficit	197734	364747	-165570	950996	334158	35077	304469	528475	2437177	1719627	1148988	292835	33169	358789	8540671
53 1981 Federal Report Surplus Deficit	170469	569264	1077528	1676593	1542210	564071	-225797	-2752	1675903	2104995	1496061	745823	600182	503153	12497704
54 1982 Federal Report Surplus Deficit	259694	722299	587185	1684074	1977529	2312812	865442	442339	2364429	2207919	1916528	813564	655393	1015418	17824625
55 1983 Federal Report Surplus Deficit	706500	731655	849170	1744953	1706995	1941681	627096	351285	1994291	1778233	1752839	783516	644726	675690	16288630
56 1984 Federal Report Surplus Deficit	323091	1375090	986888	1715764	1554379	1609011	532171	905892	2011765	2263280	1760783	735869	294836	646944	16715761

Table 10.1.2
Federal Report Surplus Deficit By Water Year
Fiscal Year 2021
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
HLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
57 1985 Federal Report Surplus Deficit	348197	675312	502945	1065135	847630	507648	486437	597091	1596525	736640	588852	145123	-86146	232724	8244112
58 1986 Federal Report Surplus Deficit	495853	922436	608101	1483403	1578679	2121841	1006491	836798	1546846	1626740	923522	493382	58321	165896	13868308
59 1987 Federal Report Surplus Deficit	66724	621540	542019	743006	271605	807546	25649	163435	1464540	678826	262508	286812	-27941	130321	6036592
60 1988 Federal Report Surplus Deficit	120126	322502	-191343	-239229	8392	108530	-176927	69345	283743	744599	900093	434568	98517	214676	2697592
61 1989 Federal Report Surplus Deficit	129371	435616	275536	170667	-339811	780099	402299	929831	1473919	856417	702308	322207	54922	204420	6397800
62 1990 Federal Report Surplus Deficit	205997	567169	818098	1270616	1370050	1189286	443442	758616	1302484	1503669	1244310	680382	414420	228215	11996754
63 1991 Federal Report Surplus Deficit	111582	1327175	971456	1627658	1578066	1381202	448471	283129	1467130	1548652	1546796	764576	530403	287500	13873796
64 1992 Federal Report Surplus Deficit	113626	402865	-190572	477037	327056	399756	-181914	-55648	1110022	562463	198400	330449	15762	65415	3574716
65 1993 Federal Report Surplus Deficit	128307	419380	38239	-78005	-416338	535010	44379	-134742	2219294	1447978	965027	398502	88781	231407	5887218
66 1994 Federal Report Surplus Deficit	200111	506516	99679	-2205	246158	93414	-141802	246851	905231	626971	813387	384651	38322	183438	4200722
67 1995 Federal Report Surplus Deficit	153857	242753	75350	773016	925260	1439931	175262	-141324	1691648	1790859	1438566	494915	141379	489546	9691019
68 1996 Federal Report Surplus Deficit	707477	1550884	1858987	2177360	2060566	2277204	930659	1099610	2276848	1919731	1620643	738660	558315	496320	20273263
69 1997 Federal Report Surplus Deficit	290274	642875	1065193	2168334	2037000	2329009	959757	1066175	2506889	2135984	1701339	802399	662112	976624	19343964
70 1998 Federal Report Surplus Deficit	1512282	1138988	516780	1126282	1432977	905538	19124	15305	2649991	2085590	1457671	700851	443070	225283	14229733
71 1999 Federal Report Surplus Deficit	165722	262730	981175	1924508	1875395	2077299	545653	654240	1853750	2113514	1693541	872384	689062	664659	16373632
72 2000 Federal Report Surplus Deficit	259636	1405619	1087553	1367705	1295802	1271296	797933	904716	1592964	584916	1126093	642336	35347	181784	12553700
73 2001 Federal Report Surplus Deficit	205230	348731	-71783	271899	162824	-19222	-276179	-295982	248934	54595	438111	445906	6083	-44178	1474969
74 2002 Federal Report Surplus Deficit	-128653	329184	250486	75369	184230	351322	299575	698905	1218958	1835087	1546146	427188	187993	255124	7530914
75 2003 Federal Report Surplus Deficit	248247	466650	-19412	191026	513405	1260838	227658	233981	752759	1684928	764021	197606	-29407	-6856	6485443
76 2004 Federal Report Surplus Deficit	169913	624322	522527	434971	51165	443217	187006	167060	1029515	1142682	748718	265385	110433	592015	6488930
77 2005 Federal Report Surplus Deficit	453430	562412	723859	1163438	1106309	472373	-223737	-101806	1058611	898288	961505	418042	55502	87119	7635344
78 2006 Federal Report Surplus Deficit	169366	648744	511925	1518864	1587803	1160979	1014118	929204	2510841	1819815	1124307	340483	14696	-56633	13294513
79 2007 Federal Report Surplus Deficit	109425	610739	602613	1342510	957109	1819980	576408	236272	1665334	1138959	1101726	325416	-57311	-171460	10257722
80 2008 Federal Report Surplus Deficit	239884	560517	155232	514373	479669	501440	33808	-77563	2078566	2303837	1550654	454805	295627	270575	9361425

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Table 10.1.3
Federal Report Surplus Deficit By Water Year
Fiscal Year 2020
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
1 1929 Federal Report Surplus Deficit	-129655	-99544	-413624	-451857	-253769	-226376	-193422	-193594	-11988	696164	-264029	-76705	-157466	-104508	-1880372
2 1930 Federal Report Surplus Deficit	-131272	-75479	-421627	-609409	-216628	-243730	-108350	-117427	-52137	-1200	-207028	-67845	-156147	-140927	-2549206
3 1931 Federal Report Surplus Deficit	-120124	-70040	-362068	-590881	-256507	-236337	-131964	-192621	-29250	-28259	-227188	-49889	-159882	-134416	-2589427
4 1932 Federal Report Surplus Deficit	-167736	-163672	-390232	-445989	-518329	335175	193423	630855	1716378	1386548	261659	-30127	-137191	-23170	2647590
5 1933 Federal Report Surplus Deficit	-132910	-87612	-43320	446640	465365	139342	67417	-53900	949070	2148921	1452833	386040	86505	-1577	5822815
6 1934 Federal Report Surplus Deficit	-20408	651635	1413742	1461477	1494548	900543	667015	695009	1338368	1118183	-269566	-108835	-192696	-199226	8949788
7 1935 Federal Report Surplus Deficit	-147403	-213827	-269913	456004	301980	121861	-92708	-24730	731465	341610	366138	222163	-170181	-140831	1481628
8 1936 Federal Report Surplus Deficit	-147900	-125559	-397167	-585830	-377931	-142842	-96728	235792	1770579	1258308	-78057	-92161	-176019	-174028	870459
9 1937 Federal Report Surplus Deficit	-122495	-46453	-361493	-635478	-448345	-306459	-169991	-192316	86646	495489	-253843	-63561	-156682	-112050	-2287032
10 1938 Federal Report Surplus Deficit	-141420	-82603	-164709	-67871	174193	490412	312158	596103	1650190	728287	448108	-98986	-206218	-66849	3570796
11 1939 Federal Report Surplus Deficit	-120918	-146165	-434283	-256137	-77755	-776	-21379	32977	467909	155139	-169573	-103873	-181883	-161846	-1018565
12 1940 Federal Report Surplus Deficit	-104010	-12937	-138840	-178163	-126564	344316	88721	-52735	678767	287072	-342472	-114771	-191628	-131023	5733
13 1941 Federal Report Surplus Deficit	-149438	-8222	-199526	-371288	-159387	-82452	-158226	-204650	-59272	135543	-210873	-53759	-164105	-50080	-1735737
14 1942 Federal Report Surplus Deficit	-150019	44938	122834	-28768	80993	-205329	-98957	-100220	134089	1372918	669253	27893	-80363	78519	1867782
15 1943 Federal Report Surplus Deficit	-120674	-113335	-206035	393238	378100	463381	713008	708700	939403	1917854	1289875	31491	-143347	-86214	6165444
16 1944 Federal Report Surplus Deficit	-138617	-91423	-392100	-319599	-257287	-351701	-199901	-188560	-122857	-6841	-291344	-75010	-175402	-144778	-2755421
17 1945 Federal Report Surplus Deficit	-147749	-110057	-356265	-541934	-280156	-253283	-203194	-202614	441650	1248969	-206421	-75762	-168842	-122972	-978630
18 1946 Federal Report Surplus Deficit	-138415	-32970	-107640	-73998	175502	331055	478735	708729	1899404	966847	759805	108019	-115326	-14461	4945286
19 1947 Federal Report Surplus Deficit	-133066	104207	564035	980238	556276	534569	246580	64100	1304887	1236782	605673	-18242	-169536	-55551	5820953
20 1948 Federal Report Surplus Deficit	408539	377525	95609	769531	512472	203682	157824	343977	2298500	2082919	747027	373419	78843	60618	8510485
21 1949 Federal Report Surplus Deficit	-80807	-8072	-182873	5236	67970	531843	274220	464882	1475763	848287	-241952	-113660	-211932	-163387	2665517
22 1950 Federal Report Surplus Deficit	-150309	-103586	-124205	899692	583481	656805	483955	228322	1324539	2041687	1733200	325318	11763	46301	7956962
23 1951 Federal Report Surplus Deficit	104899	488238	766074	1360170	1489308	1013832	563348	471091	1796032	1066427	1187114	135659	-173983	-11582	10256627
24 1952 Federal Report Surplus Deficit	295047	205204	112638	822746	501450	206527	497822	771167	2193510	1109541	451483	-2037	-187522	-169064	6808513
25 1953 Federal Report Surplus Deficit	-125180	-100163	-395603	-266726	887360	52554	-173240	-104855	922396	2124700	1206322	13686	-122778	-13803	3904671
26 1954 Federal Report Surplus Deficit	-92954	79435	-42854	640957	705677	389631	132233	68493	1698202	1743558	1680207	568516	381303	458572	8410977
27 1955 Federal Report Surplus Deficit	-67536	195332	-59369	-296093	-118035	-352462	-145201	-136947	380925	2100501	1684424	290927	-57325	-44183	3374958
28 1956 Federal Report Surplus Deficit	-37987	359647	634158	1207336	1064453	1061527	453394	944820	2252615	1995342	994212	209751	-27773	16771	11128268

Table 10.1.3
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
29 1957 Federal Report Surplus Deficit	-36023	-22472	12883	32666	-40714	429344	403590	129473	2319113	2105074	8757	-4239	-201281	-128792	5007381
30 1958 Federal Report Surplus Deficit	-113403	-72649	-164877	400837	284455	155142	-4177	230719	1722144	1657487	-71166	-28537	-190212	-122367	3683396
31 1959 Federal Report Surplus Deficit	-87039	246269	386704	1002801	1234613	315413	329441	55156	1437946	1829636	1334465	268338	77547	607289	9038579
32 1960 Federal Report Surplus Deficit	665918	658909	464056	634637	241624	223329	527410	371023	669861	1314755	315873	82151	-192150	-114418	5862978
33 1961 Federal Report Surplus Deficit	-106026	65369	-155678	441958	334232	529572	266465	-33260	1510521	1893060	54292	-17800	-169540	-138281	4474883
34 1962 Federal Report Surplus Deficit	-156790	-40543	-159576	329567	284984	-74947	120525	633495	1154363	902901	-35659	27163	-159695	-104525	2721262
35 1963 Federal Report Surplus Deficit	29192	247598	315813	713408	327184	-68266	-92245	-112977	490098	1350789	214728	-12674	-162283	23035	3263402
36 1964 Federal Report Surplus Deficit	-132890	-12572	-165736	-191919	-25701	-170363	46231	-58496	1166192	2135109	1512998	275548	17388	187857	4583647
37 1965 Federal Report Surplus Deficit	54218	138307	696411	1385025	1566325	993660	64114	690866	1947000	1198238	391664	251809	-26963	-59862	9290813
38 1966 Federal Report Surplus Deficit	-37966	-6429	-84894	135719	128985	-91516	78283	-36849	386564	1001753	211304	27517	-169608	-110968	1431894
39 1967 Federal Report Surplus Deficit	-139906	-97727	-10502	926031	760719	450563	82592	-130555	1165202	1934868	991476	97350	-92634	640	5938116
40 1968 Federal Report Surplus Deficit	-62642	82292	-84104	438189	423321	502662	-144874	-138627	347802	1409135	414031	161195	2094	305115	3655590
41 1969 Federal Report Surplus Deficit	98356	370820	137296	1011900	1254571	559434	465506	819025	2086519	1534184	559844	-55582	-187944	-101968	8551961
42 1970 Federal Report Surplus Deficit	-65180	-12257	-256073	177507	383631	71291	-125634	-116440	848768	1579398	5583	-54593	-172429	-137608	2125964
43 1971 Federal Report Surplus Deficit	-101733	-22636	-89003	1114164	1453340	837023	434333	384009	2253728	2106290	1217658	319820	192795	50685	10150475
44 1972 Federal Report Surplus Deficit	1766	62588	-6218	1124818	798449	1817897	813302	280281	2143126	1994099	1374476	356119	273671	107654	11142028
45 1973 Federal Report Surplus Deficit	-10456	46645	-100245	31659	184583	-112307	-217413	-185861	-1279	220097	-243192	-68960	-185698	-140488	-782916
46 1974 Federal Report Surplus Deficit	-127146	-40883	152370	1713746	1765198	1294522	596399	753781	1980984	2097613	1801796	385546	264580	66064	12704569
47 1975 Federal Report Surplus Deficit	-152506	-106590	-204071	254682	205991	411579	-55204	-77160	1416941	1858977	1480646	78966	-48446	136007	5199811
48 1976 Federal Report Surplus Deficit	163350	434738	1063909	996093	1170210	661598	542972	355203	2090550	1376902	1425577	605047	579314	831857	12297321
49 1977 Federal Report Surplus Deficit	-10322	-74758	-364253	-311274	-221740	-345772	-202559	-178460	-113560	-117568	-326399	-80386	-161795	-215521	-2724368
50 1978 Federal Report Surplus Deficit	-203858	-68994	-45216	16937	199006	217622	471676	43146	1402907	678989	380828	8933	-138530	237906	3201353
51 1979 Federal Report Surplus Deficit	-24870	-4975	-353833	-173762	-168091	119503	-104628	-28352	939830	235390	-279964	-94988	-197315	-111707	-247762
52 1980 Federal Report Surplus Deficit	-128542	-95607	-451504	-154618	-118359	-215922	64692	86113	1895527	1458880	-8281	-93817	-198434	-50905	1989223
53 1981 Federal Report Surplus Deficit	-125531	32539	379019	1065116	753029	-39570	-201956	-98703	1184806	1989158	1046650	347430	98050	-7308	6422731
54 1982 Federal Report Surplus Deficit	-112751	85856	-79596	527803	1013521	1535236	442979	99581	1798614	1932320	1733124	256046	169216	286578	9688525
55 1983 Federal Report Surplus Deficit	130572	112966	13155	750797	777954	882720	275674	19489	1058965	1013929	1263097	245043	72518	112777	6729654
56 1984 Federal Report Surplus Deficit	-30083	536592	92068	596571	496108	671912	245415	446420	912223	1685155	1102170	122809	-133210	120577	6864727

Table 10.1.3
Federal Report Surplus Deficit By Water Year
Fiscal Year 2020
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
LLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
57 1985 Federal Report Surplus Deficit	-10978	160483	-93741	-81159	21593	-28044	201694	244554	749763	199014	-268874	-121880	-224281	-69576	678569
58 1986 Federal Report Surplus Deficit	8061	250110	-56285	324808	624629	1096513	401986	360539	685075	1207124	-129943	-41537	-181480	-120060	4429541
59 1987 Federal Report Surplus Deficit	-140949	101172	-72933	-240344	-200113	21390	-112086	-100567	1012078	409853	-306440	-93329	-193914	-144022	-60205
60 1988 Federal Report Surplus Deficit	-144570	-115685	-468893	-571729	-269534	-232577	-178087	-140107	-80903	231269	-158561	-70971	-165030	-123811	-2489190
61 1989 Federal Report Surplus Deficit	-156837	-29764	-193753	-387928	-410971	261148	159854	593719	810562	256129	-221505	-82601	-167538	-114092	316422
62 1990 Federal Report Surplus Deficit	-115665	37311	25879	254597	665767	244346	21820	453578	942193	1466762	213211	113365	-79458	-111492	4132213
63 1991 Federal Report Surplus Deficit	-158199	532724	249119	1023687	535085	268190	155505	15363	976675	1408078	1282880	318008	-60617	-86505	6459993
64 1992 Federal Report Surplus Deficit	-152745	-32830	-430603	-281578	-171319	-101444	-176519	-138458	583542	76944	-308829	-89349	-176496	-163799	-1563483
65 1993 Federal Report Surplus Deficit	-161116	-78638	-357859	-497230	-454575	-494	-46579	-154167	1184854	693330	-11650	-47249	-142967	-89943	-164285
66 1994 Federal Report Surplus Deficit	-124327	-23485	-310021	-488833	-176926	-238562	-171922	-139228	134012	212445	-178824	-75838	-169264	-128269	-1879042
67 1995 Federal Report Surplus Deficit	-147382	-165575	-309748	-158747	238263	283655	-27141	-117869	744705	1305676	222542	-24617	-184814	14790	1673736
68 1996 Federal Report Surplus Deficit	86256	770755	1737762	1539282	1432786	1552984	483804	833727	1785232	1479778	1249123	236816	-20352	12411	13180366
69 1997 Federal Report Surplus Deficit	-101181	112212	120133	1571364	1550337	1424845	597433	893047	2265860	2044252	1432129	202019	202816	264573	12579838
70 1998 Federal Report Surplus Deficit	474873	325292	-89686	-100396	486278	111374	-111469	-102084	1612198	1708031	258644	208791	-79110	-83848	4618887
71 1999 Federal Report Surplus Deficit	-105004	-82621	83691	1007035	669262	1223903	216157	300524	1204560	1803338	1549894	522274	258623	73204	8724841
72 2000 Federal Report Surplus Deficit	-89695	626774	397288	280683	226901	319114	400997	626193	1093842	176473	264250	69240	-194317	-128309	4069436
73 2001 Federal Report Surplus Deficit	-104468	-96765	-393629	-335825	-263444	-286840	-213725	-192985	-75483	-132662	-293240	-65117	-168946	-213967	-2837095
74 2002 Federal Report Surplus Deficit	-202122	-116676	-196540	-423848	-129771	-53005	89130	294283	632150	1727410	944196	-61857	-170386	-113325	2219640
75 2003 Federal Report Surplus Deficit	-109366	-51234	-376786	-378411	-89227	269871	-11069	-77312	175215	1356351	-188277	-113507	-199674	-199170	7404
76 2004 Federal Report Surplus Deficit	-144789	46874	-98813	-304780	-227899	-59062	-62684	-117218	247249	744502	-172682	-89542	-135387	106276	-267956
77 2005 Federal Report Surplus Deficit	-33868	-2179	-58686	58938	304935	-76768	-194679	-139608	334282	631772	-113173	-58548	-166799	-119098	366520
78 2006 Federal Report Surplus Deficit	-146962	53443	-81901	636410	604667	280416	561177	554211	1450559	1737271	67989	-89708	-208048	-195061	5224463
79 2007 Federal Report Surplus Deficit	-142951	107716	-82745	334888	23642	579973	70068	-80269	1152766	994058	144462	-94250	-204521	-232969	2569866
80 2008 Federal Report Surplus Deficit	-111672	25999	-253608	-304253	-114086	1528	-65924	-135481	1048959	2107784	706460	-56244	-143428	-94450	2611584

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LLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
1 1929 Federal Report Surplus Deficit	-70404	-108653	-315141	-444025	-228188	-122015	-151839	-152965	-261357	612592	-151034	-117106	-71481	-63286	-1644902
2 1930 Federal Report Surplus Deficit	-72645	-89221	-324653	-610222	-202496	-141061	-52501	-69645	-265844	-78608	-87502	-105926	-70290	-97878	-2268491
3 1931 Federal Report Surplus Deficit	-60811	-77411	-264065	-585504	-227595	-134752	-90713	-156156	-243134	-139248	-97925	-91998	-73346	-94426	-2337084
4 1932 Federal Report Surplus Deficit	-108368	-174612	-293891	-442242	-476941	429879	234896	684944	1244602	1287735	492206	-73992	-51924	1067	2753359
5 1933 Federal Report Surplus Deficit	-72000	-97465	56634	305660	488474	257427	114147	3443	504769	2255755	1561805	345165	171020	16457	5911290
6 1934 Federal Report Surplus Deficit	25239	612980	1489056	1508748	1433196	1054313	688048	732203	955667	1110781	-158241	-142876	-106332	-157278	9045505
7 1935 Federal Report Surplus Deficit	-88653	-223647	-178259	338612	328796	250407	-54591	56676	304512	296433	605152	184129	-80714	-99726	1639128
8 1936 Federal Report Surplus Deficit	-87903	-136105	-299686	-599647	-339711	-48922	-51302	317357	1293178	1188837	94683	-132277	-91326	-132539	974639
9 1937 Federal Report Surplus Deficit	-62229	-56799	-266016	-642318	-402021	-201177	-134063	-152426	-203039	352747	-143319	-105240	-71528	-70965	-2158393
10 1938 Federal Report Surplus Deficit	-81483	-90427	-70452	-104037	200005	575322	341029	666607	1194063	755038	686326	-137160	-113327	-35534	3785969
11 1939 Federal Report Surplus Deficit	-60816	-160170	-344990	-248744	-52696	59820	16305	98800	106412	29305	-50830	-141985	-96427	-120208	-966223
12 1940 Federal Report Surplus Deficit	-43852	-20753	-31653	-195538	-113670	446973	134593	26867	269558	157927	-226417	-145862	-105392	-92091	60688
13 1941 Federal Report Surplus Deficit	-90217	-17019	-98989	-357713	-142502	8354	-119125	-172225	-303967	39824	-104111	-97686	-80199	-23439	-1559014
14 1942 Federal Report Surplus Deficit	-93508	29388	210471	-46175	91600	-108501	-40625	-28240	-145623	1317205	921222	-25018	-491	97233	2178938
15 1943 Federal Report Surplus Deficit	-62946	-119872	-111258	336782	355150	666237	718271	742601	523718	1960844	1502397	-14612	-59321	-52379	6385613
16 1944 Federal Report Surplus Deficit	-80786	-101771	-304278	-317849	-218243	-244174	-159885	-158814	-296103	-34970	-176735	-113205	-89526	-102130	-2398470
17 1945 Federal Report Surplus Deficit	-88573	-118998	-258415	-539855	-259624	-152250	-153663	-163347	143275	1152557	-98121	-115697	-83915	-80434	-817060
18 1946 Federal Report Surplus Deficit	-79220	-43046	-15091	-79099	180830	466608	544738	781830	1620816	902125	987584	70637	-31332	12038	5319418
19 1947 Federal Report Surplus Deficit	-75860	100472	679536	865532	555468	598442	266815	133162	921786	1157171	844792	-61323	-80918	-23816	5881260
20 1948 Federal Report Surplus Deficit	390953	355596	186742	627297	492969	306190	200970	426175	2015344	2193688	990390	331153	162720	77143	8757330
21 1949 Federal Report Surplus Deficit	-30281	-18092	-93496	-43410	91182	709226	316058	504329	1158181	745505	-130095	-144804	-121634	-120642	2822027
22 1950 Federal Report Surplus Deficit	-91263	-112342	-31608	801128	687805	796685	495117	290095	891207	2146545	1877653	286071	92812	69378	8199283
23 1951 Federal Report Surplus Deficit	148569	464368	841586	1343811	1486780	1046308	582979	504694	1339758	986475	1429792	96716	-82924	15599	10204512
24 1952 Federal Report Surplus Deficit	309562	195969	198105	755788	497633	295435	542770	823818	1821426	1044581	688459	-46011	-100463	-128538	6898534
25 1953 Federal Report Surplus Deficit	-66401	-111399	-301908	-281432	906036	137773	-135193	-43865	496687	2189341	1438054	-31474	-38928	14502	4171793
26 1954 Federal Report Surplus Deficit	-36713	75268	52250	551056	703401	505364	164478	136025	1379592	1884420	1784290	532136	461357	445887	8638809
27 1955 Federal Report Surplus Deficit	-16206	183629	41169	-276331	-102457	-242104	-99868	-97130	48031	2253920	1816462	251991	16260	-13310	3764056
28 1956 Federal Report Surplus Deficit	12893	338865	708089	1167267	1055429	1192525	459171	944684	2009900	2146285	1207512	169221	51947	42987	11506774

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LLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
29 1957 Federal Report Surplus Deficit	14310	-34677	99858	-55847	-29203	586406	447110	206849	1865143	2243996	187340	-46765	-111968	-88489	5284063
30 1958 Federal Report Surplus Deficit	-54840	-80402	-82367	275792	271185	262298	33280	290664	1331784	1672564	78182	-72445	-102153	-81592	3741952
31 1959 Federal Report Surplus Deficit	-31825	235417	463872	1076482	1106610	404892	352741	117488	1116821	1899033	1539134	225482	163937	579331	9249416
32 1960 Federal Report Surplus Deficit	647793	627900	547907	421586	328609	319049	548467	429012	276293	1247964	550587	43651	-99365	-78054	5811399
33 1961 Federal Report Surplus Deficit	-46651	60235	-57875	315302	344629	610797	296175	31004	1134590	1963528	272087	-59252	-82416	-96281	4685873
34 1962 Federal Report Surplus Deficit	-98753	-42895	-67394	107655	343687	16544	150831	686910	691694	859964	115851	-16917	-71830	-63391	2611957
35 1963 Federal Report Surplus Deficit	73897	237329	392752	624888	311560	18041	-50095	-63640	170350	1293956	441923	-56344	-76162	49669	3368126
36 1964 Federal Report Surplus Deficit	-74167	-15926	-65062	-211208	-1427	-68118	93446	2951	734352	2218866	1650193	327438	108393	207695	4907426
37 1965 Federal Report Surplus Deficit	91892	129649	777610	1400991	1596318	1128112	93362	743569	1614838	1352171	645421	212893	55483	-28699	9813610
38 1966 Federal Report Surplus Deficit	11765	-15599	14255	-30419	173073	-3050	130181	18980	30004	896465	449561	-10042	-81207	-69594	1514372
39 1967 Federal Report Surplus Deficit	-81067	-107797	83978	868929	786497	546227	113816	-94919	741410	2104515	1215317	59123	-12087	24886	6248829
40 1968 Federal Report Surplus Deficit	-9294	71441	3516	326575	389357	587715	-100914	-106898	-35807	1355838	646279	121520	85632	315728	3650689
41 1969 Federal Report Surplus Deficit	139726	351074	226374	1030138	1106292	703921	491365	866619	1773283	1557381	806475	-94855	-98709	-59143	8799940
42 1970 Federal Report Surplus Deficit	-10067	-19380	-171334	105643	370194	173565	-84149	-77561	423263	1596319	121395	-95834	-87185	-96823	2148045
43 1971 Federal Report Surplus Deficit	-42637	-27730	1569	1271215	1238787	1022552	457653	442187	1891668	2233268	1483953	278977	278488	77006	10606956
44 1972 Federal Report Surplus Deficit	46559	59631	75398	1067930	1216853	1683074	821443	345644	1871407	2145677	1587997	314914	357472	129785	11723785
45 1973 Federal Report Surplus Deficit	35712	41501	-22806	-35607	190420	-15832	-177527	-154650	-225446	105879	-134258	-109417	-100161	-97473	-699664
46 1974 Federal Report Surplus Deficit	-68025	-35953	255072	1797447	1684821	1402292	595884	801459	1710333	2197425	1917274	347929	351005	89933	13046896
47 1975 Federal Report Surplus Deficit	-94843	-115816	-119323	119526	224353	504451	-16782	-23422	950335	1910113	1740303	38313	29510	158090	5304807
48 1976 Federal Report Surplus Deficit	200624	414724	1153335	923574	1147860	727403	570277	417385	1760056	1312034	1544214	618084	646910	699812	12136291
49 1977 Federal Report Surplus Deficit	40095	-82957	-280785	-296123	-185052	-237571	-165566	-149009	-294419	-166903	-207760	-117906	-76757	-175554	-2396266
50 1978 Federal Report Surplus Deficit	-148880	-77870	45621	7949	210723	294914	489982	116595	966905	648606	623773	-36660	-54211	254175	3341621
51 1979 Federal Report Surplus Deficit	24004	-12405	-271334	-187556	-153373	209092	-57183	34010	549349	132727	-170828	-133589	-109655	-70126	-216866
52 1980 Federal Report Surplus Deficit	-68694	-104736	-352996	-161454	-107144	-118177	105459	171226	1444694	1413989	141215	-133045	-106783	-18924	2104631
53 1981 Federal Report Surplus Deficit	-66445	26063	460746	1016535	768991	57892	-153189	-54973	727207	2083772	1294182	310250	182501	18550	6672083
54 1982 Federal Report Surplus Deficit	-53610	78740	-2419	428085	1104414	1668792	468353	175698	1355297	1944753	1887217	304985	261361	297122	9918789
55 1983 Federal Report Surplus Deficit	168156	104367	97611	645555	802011	991062	313565	85118	680309	1045462	1482331	203773	157831	133014	6910164
56 1984 Federal Report Surplus Deficit	15798	512883	174743	477722	471560	860960	285660	506914	611335	1681156	1306653	83585	-49565	140467	7079869

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LLH-MWh - Surplus Deficit	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
57 1985 Federal Report Surplus Deficit	34017	153517	-4918	-108098	45960	55267	241535	315919	364089	134109	-155808	-158439	-129340	-36842	750969
58 1986 Federal Report Surplus Deficit	53116	239910	34644	229369	732671	1158149	431563	419820	306321	1095948	-12423	-83780	-92838	-82606	4429863
59 1987 Federal Report Surplus Deficit	-84160	95618	19768	-228888	-177654	124495	-60085	-52702	598959	242882	-196318	-133381	-105120	-102716	-59301
60 1988 Federal Report Surplus Deficit	-84973	-126566	-371799	-572698	-241613	-131515	-135475	-70239	-285962	95073	7119	-111385	-79436	-83074	-2192546
61 1989 Federal Report Surplus Deficit	-97545	-39014	-99258	-376711	-371921	344324	187883	621935	399998	202528	-110336	-119329	-82121	-72921	387511
62 1990 Federal Report Surplus Deficit	-58108	27809	130437	103863	708842	351555	59011	509479	546945	1561239	434570	74612	2599	-72945	4379907
63 1991 Federal Report Surplus Deficit	-99574	500593	350340	957881	600465	385325	178903	73045	558622	1375257	1460690	364151	22021	-61824	6665897
64 1992 Federal Report Surplus Deficit	-93121	-41659	-324030	-271457	-149380	-1792	-140085	-97084	175714	-54756	-194614	-126931	-91046	-122950	-1533191
65 1993 Federal Report Surplus Deficit	-102804	-87355	-259298	-493980	-416910	55508	-4614	-99218	783244	609149	119897	-90528	-58987	-53329	-99224
66 1994 Federal Report Surplus Deficit	-65281	-31694	-215120	-479259	-154716	-138372	-131218	-70475	-160319	66378	-71138	-114546	-84869	-86785	-1737414
67 1995 Federal Report Surplus Deficit	-88059	-175466	-209949	-168920	234405	374149	25095	-65581	373218	1266434	385615	-70122	-97112	39677	1823382
68 1996 Federal Report Surplus Deficit	128352	746830	1903964	1642715	1449014	1683458	491915	863982	1342463	1507591	1510375	198416	66825	40347	13576248
69 1997 Federal Report Surplus Deficit	-42785	106841	209767	1514391	1559803	1541280	610268	912112	1978899	2193423	1617286	252982	289861	275472	13019600
70 1998 Federal Report Surplus Deficit	464640	299693	1165	-107551	481165	199454	-65290	-53375	1228483	1674052	559869	76681	5715	-49016	4715686
71 1999 Federal Report Surplus Deficit	-47946	-84392	166086	986081	1005652	1071643	251930	347929	783177	1834373	1668648	544505	345572	91174	8964431
72 2000 Federal Report Surplus Deficit	-31162	602585	483080	157939	220903	405655	428654	683610	649368	95224	493473	27960	-105350	-86711	4025230
73 2001 Federal Report Surplus Deficit	-45854	-105645	-294114	-338730	-207122	-181955	-171057	-154728	-296919	-168690	-187582	-106283	-82191	-172380	-2513250
74 2002 Federal Report Surplus Deficit	-147429	-127130	-103215	-413859	-118261	38585	139237	350432	244966	1815947	1152480	-104762	-83959	-72243	2570789
75 2003 Federal Report Surplus Deficit	-50548	-60722	-276412	-366560	-73892	366694	34391	126	-104220	1306170	-79613	-148698	-113821	-158247	274647
76 2004 Federal Report Surplus Deficit	-84990	37395	-1596	-291290	-207093	24080	-16567	-52101	-55495	622816	-63397	-126805	-51702	127644	-139102
77 2005 Federal Report Surplus Deficit	13250	-11702	38618	-46558	328650	11360	-150150	-96622	34840	493257	13516	-99435	-82226	-78688	368110
78 2006 Federal Report Surplus Deficit	-87501	46138	18645	519853	677373	363932	582097	600675	1113098	1847773	286834	-129175	-115148	-154894	5569701
79 2007 Federal Report Surplus Deficit	-84420	96103	8223	225068	43489	638908	112011	-19001	716589	880215	367917	-131544	-113366	-192180	2548009
80 2008 Federal Report Surplus Deficit	-54967	18595	-163522	-283702	-95442	82746	-17292	-94844	736411	2313053	950300	-100907	-59098	-58657	3172674

