

2010 BPA Rate Case
Wholesale Power Rate Initial Proposal

**LOADS AND RESOURCES
STUDY DOCUMENTATION**

February 2009

WP-10-E-BPA-01A



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COMMONLY USED ACRONYMS

AC	alternating current
AFUDC	Allowance for Funds Used During Construction
AGC	Automatic Generation Control
ALF	Agency Load Forecast (computer model)
aMW	average megawatt
AMNR	Accumulated Modified Net Revenues
ANR	Accumulated Net Revenues
AOP	Assured Operating Plan
ASC	Average System Cost
ATC	Accrual to Cash
BAA	Balancing Authority Area
BASC	BPA Average System Cost
Bcf	billion cubic feet
BiOp	Biological Opinion
BPA	Bonneville Power Administration
Btu	British thermal unit
CAISO	California Independent System Operator
CBFWA	Columbia Basin Fish & Wildlife Authority
CCCT	combined-cycle combustion turbine
cfs	cubic feet per second
CGS	Columbia Generating Station
CHJ	Chief Joseph
C/M	consumers per mile of line for LDD
COB	California-Oregon Border
COE	U.S. Army Corps of Engineers
COI	California-Oregon Intertie
COSA	Cost of Service Analysis
COU	consumer-owned utility
Council	Northwest Power and Conservation Council
CP	Coincidental Peak
CRAC	Cost Recovery Adjustment Clause
CRC	Conservation Rate Credit
CRFM	Columbia River Fish Mitigation
CRITFC	Columbia River Inter-Tribal Fish Commission
CSP	Customer System Peak
CT	combustion turbine
CY	calendar year (January through December)
DC	direct current
DDC	Dividend Distribution Clause
dec	decremental
DJ	Dow Jones
DO	Debt Optimization
DOE	Department of Energy
DOP	Debt Optimization Program
DSI	direct-service industrial customer or direct-service industry

EAF	energy allocation factor
ECC	Energy Content Curve
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EN	Energy Northwest, Inc. (formerly Washington Public Power Supply System)
EPA	Environmental Protection Agency
EPP	Environmentally Preferred Power
EQR	Electric Quarterly Report
ESA	Endangered Species Act
F&O	financial and operating reports
FBS	Federal Base System
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FERC	Federal Energy Regulatory Commission
FELCC	firm energy load carrying capability
FPA	Federal Power Act
FPS	Firm Power Products and Services (rate)
FY	fiscal year (October through September)
GAAP	Generally Accepted Accounting Principles
GARD	Generation and Reserves Dispatch (computer model)
GCL	Grand Coulee
GCPs	General Contract Provisions
GEP	Green Energy Premium
GI	Generation Integration
GRI	Gas Research Institute
GRSPs	General Rate Schedule Provisions
GSP	Generation System Peak
GSU	generator step-up transformers
GTA	General Transfer Agreement
GWh	gigawatthour
HLH	heavy load hour
HOSS	Hourly Operating and Scheduling Simulator (computer model)
HYDSIM	Hydro Simulation (computer model)
IDC	interest during construction
inc	incremental
IOU	investor-owned utility
IP	Industrial Firm Power (rate)
IPR	Integrated Program Review
IRP	Integrated Resource Plan
ISD	incremental standard deviation
ISO	Independent System Operator
JDA	John Day
kaf	thousand (kilo) acre-feet
kcfs	thousand (kilo) cubic feet per second
K/I	kilowatthour per investment ratio for LDD
ksfd	thousand (kilo) second foot day

kV	kilovolt (1000 volts)
kVA	kilo volt-ampere (1000 volt-amperes)
kW	kilowatt (1000 watts)
kWh	kilowatthour
LDD	Low Density Discount
LGIP	Large Generator Interconnection Procedures
LLH	light load hour
LME	London Metal Exchange
LOLP	loss of load probability
LRA	Load Reduction Agreement
m/kWh	mills per kilowatthour
MAE	mean absolute error
Maf	million acre-feet
MCA	Marginal Cost Analysis
MCN	McNary
Mid-C	Mid-Columbia
MIP	Minimum Irrigation Pool
MMBtu	million British thermal units
MNR	Modified Net Revenues
MOA	Memorandum of Agreement
MOP	Minimum Operating Pool
MORC	Minimum Operating Reliability Criteria
MOU	Memorandum of Understanding
MRNR	Minimum Required Net Revenue
MVA _r	megavolt ampere reactive
MW	megawatt (1 million watts)
MWh	megawatthour
NCD	non-coincidental demand
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)
NIFC	Northwest Infrastructure Financing Corporation
NLSL	New Large Single Load
NOAA Fisheries	National Oceanographic and Atmospheric Administration Fisheries (formerly National Marine Fisheries Service)
NOB	Nevada-Oregon Border
NORM	Non-Operating Risk Model (computer model)
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NPCC	Northwest Power and Conservation Council
NPV	net present value
NR	New Resource Firm Power (rate)
NT	Network Transmission
NTSA	Non-Treaty Storage Agreement
NUG	non-utility generation
NWPP	Northwest Power Pool

OATT	Open Access Transmission Tariff
O&M	operation and maintenance
OMB	Office of Management and Budget
OTC	Operating Transfer Capability
OY	operating year (August through July)
PDP	proportional draft points
PF	Priority Firm Power (rate)
PI	Plant Information
PMA	(Federal) Power Marketing Agency
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
POM	Point of Metering
POR	Point of Receipt
Project Act	Bonneville Project Act
PS	BPA Power Services
PSC	power sales contract
PSW	Pacific Southwest
PTP	Point to Point Transmission (rate)
PUD	public or people's utility district
RAM	Rate Analysis Model (computer model)
RAS	Remedial Action Scheme
Reclamation	U.S. Bureau of Reclamation
RD	Regional Dialogue
REC	Renewable Energy Certificate
REP	Residential Exchange Program
RevSim	Revenue Simulation Model (component of RiskMod)
RFA	Revenue Forecast Application (database)
RFP	Request for Proposal
RiskMod	Risk Analysis Model (computer model)
RiskSim	Risk Simulation Model (component of RiskMod)
RMS	Remote Metering System
RMSE	root-mean squared error
ROD	Record of Decision
RPSA	Residential Purchase and Sale Agreement
RTF	Regional Technical Forum
RTO	Regional Transmission Operator
SCADA	Supervisory Control and Data Acquisition
SCCT	single-cycle combustion turbine
Slice	Slice of the System (product)
SME	subject matter expert
TAC	Targeted Adjustment Charge
TDA	The Dalles
Tcf	trillion cubic feet
TPP	Treasury Payment Probability

Transmission System Act	Federal Columbia River Transmission System Act
TRL	Total Retail Load
TRM	Tiered Rate Methodology
TS	BPA Transmission Services
UAI	Unauthorized Increase
UDC	utility distribution company
URC	Upper Rule Curve
USFWS	U.S. Fish and Wildlife Service
VOR	Value of Reserves
WECC	Western Electricity Coordinating Council (formerly WSCC)
WIT	Wind Integration Team
WPRDS	Wholesale Power Rate Development Study
WREGIS	Western Renewable Energy Generation Information System
WSPP	Western Systems Power Pool

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1. LOADS AND RESOURCES OVERVIEW

The Loads and Resources Documentation presents the load, sales, contract, and resource data necessary for developing Bonneville Power Administration's (BPA) wholesale power rates used in the Loads and Resources Study,

WP-10-E-BPA-01. This data is used to:

- (1) Provide base data to determine resource costs for the Revenue Requirements Study, WP-10-E-BPA-02;
- (2) Provide base data to derive billing determinants for revenue forecasts in the Wholesale Power Rate Development Study (WPRDS), WP-10-E-BPA-05;
- (3) Provide load and resource data for use in calculating risk in the Risk Analysis and Mitigation Study, WP-10-E-BPA-04; and
- (4) Provide regional hydro data for use in the secondary revenue forecast for the Market Price Forecast Study, WP-10-E-BPA-03.

2. DOCUMENTATION FOR THE LOADS AND RESOURCES STUDY

2.1 Federal System Load Obligations

BPA forecasts power sales contracts to three main customer groups: public body and cooperative utilities and Federal agencies (together called "Public Agencies"), investor-owned utilities (IOU), and direct service industrial customers (DSI). These power sales contract forecasts, together with additional inter-regional contracts obligations, termed imports, and intra-regional contractual obligations, constitute the Federal system firm load forecast used in BPA's 2010 Wholesale Power Rate Case Final Proposal Load Resource Study, WP-10-E-BPA-01. The following tables document the resulting tables methodologies and assumptions employed in developing BPA's sales forecasts.

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2.2 PUBLIC AGENCIES SALES OBLIGATION FORECAST

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Table 2.2.1
Projected PF Full and Partial Service Sales (excluding Slice deliveries)

	Full Service			Partial Service			Load Variance
	HLH (aMW)	LLH (aMW)	GSP (MW)	HLH (aMW)	LLH (aMW)	GSP (MW)	
FY2010	1,310	860	3,574	991	578	2,115	4,168
FY2011	1,343	876	3,635	1,020	594	2,166	4,252

	HLH (MWh)	LLH (MWh)	GSP (MW)	HLH (MWh)	LLH (MWh)	GSP (MW)	(MWh)
Oct-09	922,281	567,043	2,878	695,373	384,965	1,774	2,825,332
Nov-09	1,004,972	695,897	2,960	752,859	465,790	1,998	3,164,220
Dec-09	1,163,488	793,820	3,308	837,443	495,461	2,020	3,565,349
Jan-10	1,173,369	809,875	3,574	828,199	507,139	2,115	3,578,700
Feb-10	1,029,178	661,664	3,378	764,931	431,188	2,099	3,116,864
Mar-10	1,006,924	626,195	2,905	756,199	418,077	1,883	3,058,298
Apr-10	932,078	593,105	2,671	693,884	389,702	1,796	2,860,516
May-10	829,050	572,434	2,309	696,580	447,221	1,667	2,851,320
Jun-10	826,665	502,361	2,292	631,098	354,282	1,498	2,807,998
Jul-10	829,553	595,551	2,757	670,901	394,943	1,643	2,995,458
Aug-10	882,468	534,443	2,528	693,856	384,142	1,628	2,952,195
Sep-10	879,952	581,697	2,418	658,066	388,223	1,602	2,731,195
Oct-10	935,653	587,506	2,938	700,540	409,794	1,801	2,882,753
Nov-10	1,035,206	702,652	3,020	788,319	462,663	2,056	3,225,846
Dec-10	1,186,734	810,057	3,375	860,077	508,357	2,065	3,631,607
Jan-11	1,196,415	826,416	3,635	851,586	521,220	2,166	3,647,127
Feb-11	1,052,885	677,655	3,441	787,196	443,873	2,150	3,183,637
Mar-11	1,027,238	639,210	2,954	778,011	430,230	1,930	3,118,243
Apr-11	951,063	605,510	2,720	714,398	401,469	1,844	2,917,726
May-11	848,085	585,855	2,353	715,608	459,378	1,711	2,908,972
Jun-11	847,046	515,030	2,336	650,645	365,485	1,542	2,866,252
Jul-11	871,062	592,726	2,808	679,765	420,748	1,665	3,062,738
Aug-11	911,980	539,273	2,578	728,844	382,509	1,688	3,013,430
Sep-11	898,996	594,624	2,465	677,673	400,102	1,649	2,788,488

Table 2.2.2
Projected PF Block and Slice Block Sales (excluding Slice deliveries)

	Block			Slice Block			
	HLH (aMW)	LLH (aMW)	GSP (MW)	HLH (aMW)	LLH (aMW)	GSP (MW)	Load Variance
FY2010	346	271	680	646	518	1,575	0
FY2011	342	268	680	649	521	1,575	0

	HLH (MWh)	LLH (MWh)	GSP (MW)	HLH (MWh)	LLH (MWh)	GSP (MW)	
Oct-09	215,554	155,678	499	507,479	366,512	1,175	0
Nov-09	230,055	201,898	599	530,120	465,235	1,381	0
Dec-09	282,285	222,571	679	637,797	502,879	1,533	0
Jan-10	266,073	228,823	665	630,167	541,944	1,575	0
Feb-10	261,175	195,881	680	600,844	450,633	1,565	0
Mar-10	289,590	208,478	670	602,612	433,825	1,395	0
Apr-10	282,150	206,186	678	440,306	321,762	1,058	0
May-10	269,376	231,664	673	271,574	258,286	920	0
Jun-10	261,793	191,311	629	257,497	206,641	958	0
Jul-10	249,783	196,945	600	306,038	269,912	1,120	0
Aug-10	213,515	168,349	513	374,719	318,649	1,214	0
Sep-10	205,689	164,551	514	501,045	400,836	1,253	0
Oct-10	207,459	163,573	499	488,683	385,308	1,175	0
Nov-10	239,812	192,449	600	552,208	443,147	1,381	0
Dec-10	282,285	222,571	679	637,797	502,879	1,533	0
Jan-11	266,073	228,823	665	630,167	541,944	1,575	0
Feb-11	261,175	195,881	680	600,844	450,633	1,565	0
Mar-11	289,590	208,478	670	602,612	433,825	1,395	0
Apr-11	282,150	206,186	678	440,306	321,762	1,058	0
May-11	240,052	206,444	600	291,721	288,797	1,123	0
Jun-11	261,793	191,311	629	257,497	206,641	958	0
Jul-11	240,052	206,444	600	291,721	288,797	1,123	0
Aug-11	221,602	160,046	513	390,094	297,395	1,208	0
Sep-11	205,689	164,551	514	499,445	399,556	1,249	0

**Table 2.2.3
Full Service Customers**

Albion, City of	Fairchild AFB	Parkland L & W
Alder Mutual	Farmers Elec Coop	Peninsula Light Company
Ashland, City of	Ferry County PUD #1	Plummer, City of
Asotin County PUD #1	Forest Grove, City of	Port Angeles, City of
Bandon, City of	Harney Elec Coop	Port of Seattle
Benton REA	Hermiston, City of	Puget Sound Naval Shipyard (Bremerton)
Big Bend Elec Coop	Heyburn, City of	Richland, City of
Blaine, City of	Hood River Elec Coop	Riverside Elec Coop
Bonnars Ferry, City of	Idaho County L & P	Rupert, City of
Burley, City of	Inland P & L	Salem Elec Coop
Canby, City of	Kittitas County PUD #1	Skamania County PUD #1
Cascade Locks, City of	Kootenai Electric Coop	Soda Springs, City of
Central MT Elec Power Coop	Lakeview L & P (WA)	Southern MT G&T
Centralia, City of	Lewis County PUD #1	Southside Elec Lines
Cheney, City of	Lower Valley P & L	Steilacoom, Town of
Chewelah, City of	Mason County PUD #1	Sumas, Town of
Clallam County PUD #1	Mason County PUD #3	Surprise Valley Elec Coop
Columbia Basin Elec Coop	McCleary, City of	Tanner Elec Coop
Columbia Power Coop	Midstate Elec Coop	Tillamook PUD #1
Columbia REA	Milton Freewater, City of	U.S. Bureau of Mines
Columbia River PUD	Milton, Town of	U.S. Naval Station, Everett (Jim Creek)
Consol Irrig Dist #19	Minidoka, City of	U.S. Naval Submarine Base,(Bangor)
Coulee Dam, City of	Modern Elec Coop	Umpqua Indian Utility Cooperative
Declo, City of	Monmouth, City of	United Electric Coop
Drain, City of	Nespelem Valley Elec Coop	USBIA Wapato
East End Mutual Electric	Northern Wasco County PUD	USDOE-Richland
Eatonville, City of	Ohop Mutual Light Company	Vera Irrigation District
Ellensburg, City of	Orcas P & L	Wahkiakum County PUD #1
Elmhurst Mutual P & L	Oregon Trail Coop	Wasco Elec Coop
Emerald County PUD	Pacific County PUD #2	Whatcom County PUD #1
Energy Northwest		Yakama Power

**Table 2.2.4
Partial Service Customers**

Central Lincoln	Flathead	Springfield
Clark	Klickitat	Wells
Cowlitz	McMinnville	

**Table 2.2.5
Slice/Slice Block Service Customers**

Benton PUD	Fall River	Pend Oreille
Blachly-Lane	Franklin	Raft River
Central Electric	Grays Harbor	Salmon River
Clatskanie	Idaho Falls	Seattle
Clearwater	Lane Electric	Snohomish
Consumers Power	Lost River	Umatilla
Coos-Curry	Northern Lights	West Oregon
Douglas Electric	Okanogan Coop	
EWEB	Okanogan PUD	

**Table 2.2.6
PF Block Service Customers**

Grant	Tacoma	
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Table 2.2.7
ASC Total Retail Load Forecasts (MWh)
for FY 2010-2015

MWh	Rate Period		7(b)(2) Rate Test Period			
	2010	2011	2012	2013	2014	2015
Avista	9,349,910	9,508,840	9,709,299	9,890,789	10,127,628	10,410,835
Franklin County PUD	1,002,000	1,018,000	1,034,000	1,049,000	1,064,218	1,079,656
NorthWestern	5,984,534	6,060,357	6,137,896	6,216,581	6,296,430	6,377,459
PacifiCorp	22,207,898	22,427,330	22,654,332	22,880,278	23,337,884	23,804,641
Portland General Electric	18,573,814	18,863,984	19,169,620	19,516,498	19,920,821	20,318,515
Puget Sound Energy	22,793,215	23,219,628	23,630,599	24,025,137	24,453,594	24,900,675
Idaho Power	15,296,781	15,605,691	15,843,167	15,975,336	16,152,990	16,312,799
Snohomish County PUD	7,001,128	7,097,109	7,193,772	7,259,084	7,320,442	7,383,922

Table 2.2.8
Residential and Small Farm Retail Load Forecasts (MWh)
for FY 2010-2015

MWh	Rate Period		7(b)(2) Rate Test Period			
	2010	2011	2012	2013	2014	2015
Avista	3,793,631	3,839,114	3,700,715	3,836,507	3,900,396	4,005,616
Franklin PUD	337,154	345,413	350,842	355,931	361,095	366,333
Idaho Power	6,091,913	6,244,404	5,943,592	5,990,357	6,064,650	6,134,773
NorthWestern	593,782	601,326	609,020	616,827	624,750	632,790
PacifiCorp	9,288,804	9,380,585	9,475,532	9,570,037	9,761,438	9,956,667
Portland General	8,301,944	8,384,570	8,520,417	8,674,596	8,854,307	9,031,073
Puget Sound Energy	11,353,850	11,478,752	11,667,955	11,948,236	12,335,634	12,857,454
Snohomish PUD	3,577,877	3,639,288	3,700,556	3,757,008	3,810,864	3,866,481

ENERGY ANALYSIS

2.3 FEDERAL SYSTEM LOAD RESOURCE BALANCE-ENERGY ANALYSIS
Monthly Energy in Average Megawatts

Table 2.3.1 FY 2010 Loads and Resources-Federal System10
Table 2.3.2 FY 2011 Loads and Resources-Federal System11

Table 2.3.1

Loads and Resources - Federal System

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

1/7/2009

1937 Water Year

[55] 2010 Initial Rate Case (Final)

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
<u>Non-Utility Obligations</u>															
Fed. Agencies 2002 PSC	112	129	143	146	139	127	119	119	112	105	119	120	120	111	124
USBR 2002 PSC	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
DSI 2002 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Firm Non-Utility Obligations	208	144	175	216	218	178	346	346	408	402	442	389	389	340	289
<u>Transfers Out</u>															
NGP 2002 PSC	2,945	3,397	3,778	3,852	3,675	3,221	3,098	3,098	3,081	3,223	3,415	3,300	3,300	3,018	3,333
GPU 2002 PSC	2,108	2,568	2,800	2,795	2,808	2,555	2,185	2,185	2,080	1,838	1,966	2,025	2,025	2,165	2,325
NGP 2002 Slice PSC	580	721	654	657	586	510	436	504	733	631	620	673	572	566	613
GPU 2002 Slice PSC	966	1,200	1,089	1,095	977	849	726	840	1,220	1,051	1,033	1,120	953	942	1,020
IOU 2002 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exports	672	665	673	672	668	666	691	691	715	712	703	661	662	656	680
Regional Transfers (Out)	308	609	622	619	564	411	379	379	414	244	243	402	402	253	422
Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Transfers Out	7,578	9,160	9,617	9,690	9,277	8,212	7,516	7,697	8,243	7,700	7,980	8,181	7,915	7,600	8,393
Total Firm Obligations	7,786	9,304	9,792	9,907	9,495	8,390	7,861	8,043	8,651	8,102	8,422	8,570	8,305	7,940	8,681
<u>Hydro Resources</u>															
Regulated Hydro	6,091	7,758	7,060	7,158	6,311	5,235	4,408	5,198	7,743	6,475	6,645	7,234	6,038	5,928	6,487
Independent Hydro	348	305	213	197	192	277	401	438	729	782	497	460	440	430	403
Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Fed CER (Canada)	137	137	137	137	137	137	141	141	141	141	141	141	141	141	139
Total Hydro Resources	6,576	8,199	7,409	7,491	6,640	5,649	4,950	5,776	8,613	7,398	7,283	7,835	6,619	6,499	7,029
<u>Other Resources</u>															
Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewables	83	87	83	81	82	115	97	97	96	86	92	83	83	82	89
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imports	180	252	305	279	234	203	204	173	83	94	125	105	103	138	182
Regional Transfers (In)	222	269	206	229	216	186	180	180	177	187	170	196	197	226	205
Large Thermal	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
Non-Utility Generation	13	26	30	29	26	25	45	45	41	27	19	27	25	9	26
Augmentation Purchases	372	372	372	372	372	372	372	372	372	372	372	372	372	372	372
Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Other Resources	1,900	2,036	2,026	2,020	1,959	1,931	1,928	1,897	1,799	1,795	1,808	1,813	1,810	1,857	1,904
Total Resources	8,476	10,235	9,435	9,511	8,599	7,580	6,878	7,674	10,412	9,194	9,090	9,647	8,429	8,355	8,933
<u>Reserves & Maintenance</u>															
Hydro Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small Thermal & Misc. Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contract Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Large Thermal Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Hydro Maint.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spinning Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Trans. Losses	-239	-289	-266	-268	-242	-214	-194	-216	-294	-259	-256	-272	-238	-236	-252
Total Reserves, Maintenance & Losses	-239	-289	-266	-268	-242	-214	-194	-216	-294	-259	-256	-272	-238	-236	-252
Total Net Resources	8,237	9,946	9,169	9,243	8,356	7,367	6,684	7,457	10,118	8,934	8,834	9,375	8,191	8,120	8,681
Total Firm Surplus/Deficit	451	642	-623	-664	-1,139	-1,023	-1,178	-586	1,468	832	412	805	-114	180	0

Table 2.3.2

Loads and Resources - Federal System

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

1/7/2009

1937 Water Year

[55] 2010 Initial Rate Case (Final)

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
<u>Non-Utility Obligations</u>															
Fed. Agencies 2002 PSC	114	132	146	147	140	128	120	120	113	106	120	121	121	112	125
USBR 2002 PSC	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
DSI 2002 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Firm Non-Utility Obligations	210	146	177	217	219	179	346	346	409	403	443	390	390	341	290
<u>Transfers Out</u>															
NGP 2002 PSC	3,008	3,467	3,851	3,924	3,753	3,283	3,158	3,158	3,140	3,285	3,482	3,352	3,352	3,070	3,398
GPU 2002 PSC	2,111	2,575	2,809	2,808	2,823	2,566	2,195	2,195	2,088	1,846	1,975	2,035	2,035	2,174	2,334
NGP 2002 Slice PSC	584	725	658	662	591	514	400	423	651	550	613	674	574	567	596
GPU 2002 Slice PSC	973	1,208	1,096	1,102	984	856	666	704	1,085	916	1,021	1,123	955	944	992
IOU 2002 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exports	624	621	628	628	623	621	646	646	669	673	663	653	653	646	641
Regional Transfers (Out)	308	609	622	619	564	411	379	379	414	244	243	233	233	59	392
Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Transfers Out	7,608	9,205	9,665	9,744	9,337	8,251	7,445	7,506	8,048	7,514	7,997	8,070	7,803	7,461	8,353
Total Firm Obligations	7,818	9,351	9,843	9,961	9,556	8,429	7,791	7,852	8,456	7,917	8,440	8,460	8,193	7,801	8,643
<u>Hydro Resources</u>															
Regulated Hydro	6,097	7,766	7,067	7,166	6,318	5,240	4,411	5,202	7,750	6,481	6,653	7,243	6,045	5,934	6,493
Independent Hydro	348	305	213	197	192	277	401	438	729	782	497	460	440	430	403
Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Fed CER (Canada)	141	141	141	141	141	141	139	139	139	139	139	139	139	139	140
Total Hydro Resources	6,586	8,212	7,421	7,504	6,650	5,658	4,952	5,780	8,618	7,402	7,288	7,842	6,624	6,503	7,037
<u>Other Resources</u>															
Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewables	83	87	83	81	82	115	97	97	96	86	92	83	83	82	89
Cogeneration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imports	169	240	294	268	223	193	193	168	76	94	124	105	104	137	175
Regional Transfers (In)	213	259	196	219	207	184	179	179	174	183	167	193	194	30	184
Large Thermal	1,030	1,030	1,030	1,030	1,030	1,030	550	0	0	0	897	1,030	1,030	1,030	784
Non-Utility Generation	13	26	30	29	26	25	45	45	41	27	19	27	25	9	26
Augmentation Purchases	599	599	599	599	599	599	599	599	599	599	599	599	599	599	599
Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Other Resources	2,107	2,241	2,232	2,226	2,166	2,146	1,662	1,087	986	988	1,898	2,036	2,035	1,887	1,857
Total Resources	8,693	10,453	9,653	9,730	8,817	7,804	6,614	6,867	9,604	8,390	9,187	9,879	8,659	8,390	8,894
<u>Reserves & Maintenance</u>															
Hydro Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small Thermal & Misc. Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Contract Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Large Thermal Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Hydro Maint.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spinning Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Trans. Losses	-245	-295	-272	-274	-249	-220	-187	-194	-271	-237	-259	-279	-244	-237	-251
Total Reserves, Maintenance & Losses	-245	-295	-272	-274	-249	-220	-187	-194	-271	-237	-259	-279	-244	-237	-251
Total Net Resources	8,448	10,159	9,380	9,455	8,568	7,584	6,428	6,673	9,333	8,154	8,927	9,600	8,415	8,153	8,643
Total Firm Surplus/Deficit	630	808	-462	-506	-988	-846	-1,364	-1,179	877	237	488	1,141	222	352	0

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ENERGY ANALYSIS

2.4 FEDERAL LOADS AND RESOURCES STUDY-ENERGY ANALYSIS
Monthly Energy in Average Megawatts
For FY 2010 and 2011

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Table A-2: Federal Exports
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Exports East of Continental Divide															
1 BPA to Other Entities	42	45	53	53	48	46	41	41	38	41	41	45	44	38	45
2 Total Exports to ECD	42	45	53	53	48	46	41	41	38	41	41	45	44	38	45
Exports to Pacific Southwest															
3 BPA to PASA C/IX	0	0	0	0	0	0	0	0	0	0	0	4	4	4	1
4 BPA to PASA S/IX	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0
5 BPA to RVSD CapS	0	5	5	5	5	5	5	5	6	6	0	0	0	0	3
6 BPA to RVSD C/IX	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7 BPA to RVSD C/IX	11	3	3	3	3	3	3	3	0	0	0	11	11	11	5
8 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	25	26	26	0	0	0	4
9 BPA NW-SW Inter tie Losses	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0
10 Total Exports To PSW	18	8	8	7	8	8	8	8	35	29	16	15	16	16	15
Exports to Inland Southwest															
11 BPA to SPP PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
12 Total Exports To ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
Exports to Canada															
13 BPA to BC/HP CanEnt	567	567	567	567	567	567	567	567	567	567	567	567	527	527	560
14 Total Exports To Canada	567	567	567	567	567	567	567	567	567	567	567	567	527	527	560
Exports to Other Entities															
15 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports	672	665	673	672	668	666	691	691	715	712	703	661	662	656	680

Table A-2: Federal Exports
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)
 1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Exports East of Continental Divide															
1 BPA to Other Entities	42	46	54	53	48	46	42	42	39	41	41	46	45	39	45
2 Total Exports to ECD	42	46	54	53	48	46	42	42	39	41	41	46	45	39	45
Exports to Pacific Southwest															
3 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	0	4	4	4	1
4 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0
5 BPA to RVSD C/N/X	10	3	3	3	3	3	3	3	0	0	0	10	11	11	5
6 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	25	26	26	0	0	0	4
7 BPA NW-SW Inertie Losses	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0
8 Total Exports To PSW	10	3	3	3	3	3	3	3	29	29	29	15	16	16	11
Exports to Inland Southwest															
9 BPA to SPP PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
10 Total Exports To ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
Exports to Canada															
11 BPA to BCHP CanEnt	527	527	527	527	527	527	527	527	527	527	527	527	517	517	525
12 Total Exports To Canada	527	527	527	527	527	527	527	527	527	527	527	527	517	517	525
Exports to Other Entities															
13 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports	624	621	628	628	623	621	646	646	669	673	663	663	653	646	641
14 Federal Entities															

Table A-3: Federal Regulated Hydro Projects

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

1937 Water Year

1/7/2009

[55] 2010 Initial Rate Case (Final)

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Regulated Hydro Projects															
1 Albeni Falls	39	27	16	17	14	16	18	19	35	44	40	28	21	22	26
2 Bonneville	477	583	562	568	538	434	285	170	355	297	195	206	140	466	406
3 Chief Joseph	1,001	1,399	1,187	1,304	1,081	803	564	877	1,143	947	1,166	1,455	1,147	937	1,083
4 Dworshak	52	51	51	51	51	51	51	53	71	285	451	444	415	180	148
5 Grand Coulee	1,876	2,598	2,135	2,279	1,773	1,229	826	1,299	1,762	1,637	2,176	2,700	2,085	1,719	1,887
6 Hungry Horse	87	92	93	94	93	90	69	28	29	50	169	123	108	103	89
7 Ice Harbor	136	97	145	110	140	179	217	221	366	279	166	117	148	117	174
8 John Day	764	985	914	934	864	749	648	639	865	785	699	763	627	732	802
9 Libby	113	213	190	86	85	84	84	83	303	264	409	251	196	165	185
10 Little Goose	139	101	148	116	130	177	259	322	552	303	169	140	154	132	200
11 Lower Granite	136	101	148	116	131	177	251	325	547	301	116	126	156	137	195
12 Lower Monumental	137	97	147	112	144	183	270	326	544	306	123	82	149	122	194
13 McNary	530	652	602	623	574	475	375	376	543	413	280	292	277	513	489
14 The Dalles	603	762	722	748	696	588	490	459	627	566	486	506	415	586	610
Total Regulated Hydro	6,091	7,758	7,060	7,158	6,311	5,235	4,408	5,198	7,743	6,475	6,645	7,234	6,038	5,928	6,487
Total Regulated Hydro w/Enc.															
15 Federal System	6,091	7,758	7,060	7,158	6,311	5,235	4,408	5,198	7,743	6,475	6,645	7,234	6,038	5,928	6,487
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total Regulated Hydro w/Enc.	6,091	7,758	7,060	7,158	6,311	5,235	4,408	5,198	7,743	6,475	6,645	7,234	6,038	5,928	6,487

Table A-3: Federal Regulated Hydro Projects

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

1937 Water Year

1/7/2009

[55] 2010 Initial Rate Case (Final)

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Regulated Hydro Projects															
1 Albeni Falls	39	27	16	17	14	16	18	19	35	44	40	28	21	22	26
2 Bonneville	477	583	562	568	538	434	285	170	355	297	195	206	140	466	406
3 Chief Joseph	1,005	1,404	1,191	1,308	1,084	805	566	879	1,147	950	1,170	1,460	1,150	939	1,086
4 Dworshak	52	51	51	51	51	51	51	53	71	285	451	444	415	180	148
5 Grand Coulee	1,880	2,602	2,139	2,283	1,776	1,231	828	1,301	1,765	1,639	2,180	2,705	2,089	1,722	1,890
6 Hungry Horse	87	92	93	94	93	90	69	28	29	50	169	123	108	103	89
7 Ice Harbor	136	97	145	110	140	179	217	221	366	279	166	117	148	117	174
8 John Day	764	985	914	934	864	749	648	639	865	785	699	763	627	732	802
9 Libby	113	213	190	86	85	84	84	83	303	264	409	252	196	165	185
10 Little Goose	139	101	148	116	130	177	259	322	552	303	169	140	154	132	200
11 Lower Granite	136	101	148	116	131	177	251	325	547	301	116	126	156	137	195
12 Lower Monumental	137	97	147	112	144	183	270	326	544	306	123	82	149	122	194
13 McNary	530	652	602	623	574	475	375	376	543	413	280	292	277	513	489
14 The Dalles	603	762	722	748	696	588	490	459	627	566	486	506	415	586	610
Total Regulated Hydro	6,097	7,766	7,067	7,166	6,318	5,240	4,411	5,202	7,750	6,481	6,653	7,243	6,045	5,934	6,493
Total Regulated Hydro w/Enc.															
15 Federal System	6,097	7,766	7,067	7,166	6,318	5,240	4,411	5,202	7,750	6,481	6,653	7,243	6,045	5,934	6,493
16 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total Regulated Hydro w/Enc.	6,097	7,766	7,067	7,166	6,318	5,240	4,411	5,202	7,750	6,481	6,653	7,243	6,045	5,934	6,493

Table A-4: Federal Independent Hydro Projects

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

1/7/2009

1937 Water Year

[55] 2010 Initial Rate Case (Final)

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Independent Hydro Projects															
1 Anderson Ranch	6	6	6	6	6	6	6	6	7	33	32	27	17	11	15
2 Big Cliff	11	13	7	7	6	7	7	9	9	21	7	6	6	8	10
3 Black Canyon	9	6	7	9	5	8	10	10	10	8	8	10	10	8	8
4 Boise River Diversion	0	0	0	0	0	0	0	2	3	3	3	3	3	2	1
5 Bonneville Fishway	25	12	12	12	25	25	25	25	25	25	25	25	25	25	21
6 Chandler	7	12	13	10	9	13	10	10	8	8	5	5	5	4	9
7 Cougar	26	25	6	5	7	7	7	8	29	29	12	9	9	26	17
8 Cowlitz Falls	6	3	23	10	14	33	46	50	64	66	29	12	9	8	26
9 Detroit	45	48	21	22	18	25	35	37	102	95	33	26	26	34	42
10 Dexter	10	16	4	4	5	5	10	16	17	17	6	10	11	5	9
11 Foster	10	8	10	5	10	20	19	18	21	23	7	7	7	13	13
12 Green Peter	19	17	19	8	1	34	90	45	59	50	12	16	16	30	28
13 Green Springs - USBR	3	3	5	6	6	6	5	5	5	8	9	10	9	6	6
14 Hillis Creek	24	29	6	6	6	7	12	32	35	35	14	9	9	24	18
15 Idaho Falls - City Plant	6	6	5	6	5	5	5	5	7	7	7	6	6	6	6
16 Idaho Falls - Lower Plant	7	6	5	6	6	5	6	6	7	7	7	6	6	7	6
17 Idaho Falls - Upper Plant	6	6	5	6	5	5	5	5	7	7	7	6	6	6	6
18 Lookout Point	38	49	10	10	12	16	40	66	83	78	26	43	44	18	36
19 Lost Creek	18	19	19	19	13	14	15	17	55	55	46	40	38	30	29
20 Mintdoka	12	3	9	3	2	2	14	14	31	31	31	31	31	29	16
21 Packwood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Pallsades	56	19	16	34	28	22	19	19	97	165	162	141	135	132	74
23 Roza	4	0	5	4	4	13	13	13	13	13	13	13	13	0	8
Total Independent Hydro	348	305	213	197	192	277	401	438	729	782	497	460	440	430	403
Total Independent Hydro W/Enc.															
24 Federal System	348	305	213	197	192	277	401	438	729	782	497	460	440	430	403

Table A-4: Federal Independent Hydro Projects

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

1/7/2009

1937 Water Year

[55] 2010 Initial Rate Case (Final)

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Independent Hydro Projects															
1 Anderson Ranch	6	6	6	6	6	6	6	6	7	33	32	27	17	11	15
2 Big Cliff	11	13	7	7	6	7	9	9	21	21	7	6	6	8	10
3 Black Canyon	9	6	7	9	5	8	10	10	10	8	8	10	10	8	8
4 Boise River Diversion	0	0	0	0	0	0	0	2	3	3	3	3	3	2	1
5 Bonneville Fishway	25	12	12	12	25	25	25	25	25	25	25	25	25	25	21
6 Chandler	7	12	13	10	9	13	10	10	8	8	5	5	5	4	9
7 Cougar	26	25	6	5	7	7	8	29	29	29	12	9	9	26	17
8 Cowlitz Falls	6	3	23	10	14	33	46	50	64	66	29	12	9	8	26
9 Detroit	45	48	21	22	18	25	35	37	102	95	33	26	26	34	42
10 Dexter	10	16	4	4	5	5	10	16	17	17	6	10	11	5	9
11 Foster	10	8	10	5	10	20	19	18	21	23	7	7	7	13	13
12 Green Peter	19	17	19	8	1	34	90	45	59	50	12	16	16	30	28
13 Green Springs - USBR	3	3	5	6	6	6	5	5	5	8	9	10	9	6	6
14 Hillis Creek	24	29	6	6	6	7	12	32	35	35	14	9	9	24	18
15 Idaho Falls - City Plant	6	6	5	6	5	5	5	5	7	7	7	6	6	6	6
16 Idaho Falls - Lower Plant	7	6	5	6	6	5	6	6	7	7	7	6	6	7	6
17 Idaho Falls - Upper Plant	6	6	5	6	5	5	5	5	7	7	7	6	6	6	6
18 Lookout Point	38	49	10	10	12	16	40	66	83	78	26	43	44	18	36
19 Lost Creek	18	19	19	19	13	14	15	17	55	55	46	40	38	30	29
20 Mintdoka	12	3	9	3	2	2	14	14	31	31	31	31	31	29	16
21 Packwood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Pallsades	56	19	16	34	28	22	19	19	97	165	162	141	135	132	74
23 Roza	4	0	5	4	4	13	13	13	13	13	13	13	13	0	8
Total Independent Hydro w/Enc.	348	305	213	197	192	277	401	438	729	782	497	460	440	430	403
Total Independent Hydro W/Enc.															
24 Federal System	348	305	213	197	192	277	401	438	729	782	497	460	440	430	403

Table A-5: Federal Imports
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Imports From East of Continental Divide															
1 PPL to BPA PwrS	108	161	215	189	145	117	90	90	0	18	34	13	13	42	94
2 Total Imports From ECD	108	161	215	189	145	117	90	90	0	18	34	13	13	42	94
Imports From Pacific Southwest															
3 PASA to BPA XchgNrg	3	3	3	3	3	2	0	0	0	0	0	0	0	3	2
4 PASA to BPA S/NX	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1
6 RVSD to BPA XchgNrg	4	6	6	6	6	6	6	6	0	0	0	0	0	0	3
7 RVSD to BPA PkRepl	0	5	5	5	5	5	5	5	6	0	0	0	0	0	3
8 RVSD to BPA PkRepl	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9 RVSD to BPA XchgNrg	0	17	16	17	16	15	15	0	0	0	0	0	0	0	7
10 RVSD to BPA S/PwrIX	0	10	9	10	9	9	9	0	0	0	0	0	0	0	4
11 RVSD to BPA PkRepl	11	3	3	3	3	3	3	3	0	0	11	11	10	11	5
12 Total Imports From PSW	26	45	43	44	43	40	38	8	6	0	15	16	15	20	27
Imports From Inland Southwest															
13 SPP to BPA PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
14 Total Imports From ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
Imports From Canada															
15 BCHP to BPA PwrS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16 Total Imports From Canada	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Imports From Other Entities															
17 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Imports	180	252	305	279	234	203	204	173	83	94	125	105	103	138	182
18 Federal System															

Table A-5: Federal Imports
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Imports From East of Continental Divide															
1 PPL to BPA PwrS	108	161	215	189	145	117	90	90	0	18	34	13	13	42	94
2 Total Imports From ECD	108	161	215	189	145	117	90	90	0	18	34	13	13	42	94
Imports From Pacific Southwest															
3 PASA to BPA XchgNrg	3	3	3	3	3	2	0	0	0	0	0	0	0	3	2
4 PASA to BPA S/N/X	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	4	4	4	4	1
6 RVSD to BPA XchgNrg	0	16	16	17	16	16	16	0	0	0	0	0	0	0	7
7 RVSD to BPA S/Pwr/X	0	10	9	10	9	9	9	0	0	0	0	0	0	0	4
8 RVSD to BPA PkRepl	10	3	3	3	3	3	3	3	0	0	10	11	11	11	5
9 Total Imports From PSW	14	33	32	33	32	30	28	3	0	0	15	16	16	19	20
Imports From Inland Southwest															
10 SPP to BPA PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
11 Total Imports From ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
Imports From Canada															
12 BCHP to BPA PwrS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13 Total Imports From Canada	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Imports From Other Entities															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Imports	169	240	294	268	223	193	193	168	76	94	124	105	104	137	175
15 Federal System															

Table A-8: Federal Renewable Resources
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Federal System															
1 Condon Wind Project	11	13	12	10	9	15	9	9	9	8	8	7	7	8	10
2 Foote Creek 1	6	6	8	8	8	7	6	6	4	4	4	3	3	4	6
3 Foote Creek 2	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1
4 Foote Creek 4	5	8	8	9	9	6	7	7	5	5	4	3	3	3	6
5 Georgia-Pacific Paper (Wauna)	22	25	26	27	27	26	25	25	22	12	20	20	20	21	23
6 Klondike I	7	5	4	3	5	8	8	8	10	11	11	9	9	8	7
7 Klondike III	12	9	7	6	10	17	16	16	20	20	23	19	19	16	15
8 StateLine Wind Project	20	21	18	15	12	35	24	25	25	25	24	22	21	21	22
9 Total Federal System	83	87	83	81	82	115	97	97	96	86	92	83	83	82	89
Renewable Resources															
10 Federal System	83	87	83	81	82	115	97	97	96	86	92	83	83	82	89

Table A-8: Federal Renewable Resources
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Federal System															
1 Condon Wind Project	11	13	12	10	9	15	9	9	9	8	8	7	7	8	10
2 Foote Creek 1	6	6	8	8	8	7	6	6	4	4	4	3	3	4	6
3 Foote Creek 2	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1
4 Foote Creek 4	5	8	8	9	9	6	7	7	5	5	4	3	3	3	6
5 Georgia-Pacific Paper (Wauna)	22	25	26	27	27	26	25	25	22	12	20	20	20	21	23
6 Klondike I	7	5	4	3	5	8	8	8	10	11	11	9	9	8	7
7 Klondike III	12	9	7	6	10	17	16	16	20	20	23	19	19	16	15
8 StateLine Wind Project	20	21	18	15	12	35	24	25	25	25	24	22	21	21	22
9 Total Federal System	83	87	83	81	82	115	97	97	96	86	92	83	83	82	89
Renewable Resources															
10 Federal System	83	87	83	81	82	115	97	97	96	86	92	83	83	82	89

Table A-10: Federal Large Thermal
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Columbia Generating Station: Uranium															
1 BPA - Power Business	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
2 Columbia Generating Station: Regiona	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
Total Large Thermal															
3 Federal System	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030

Table A-10: Federal Large Thermal
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Columbia Generating Station: Uranium															
1 BPA - Power Business	1,030	1,030	1,030	1,030	1,030	1,030	550	0	0	0	897	1,030	1,030	1,030	784
2 Columbia Generating Station: Regiona	1,030	1,030	1,030	1,030	1,030	1,030	550	0	0	0	897	1,030	1,030	1,030	784
Total Large Thermal															
3 Federal System	1,030	1,030	1,030	1,030	1,030	1,030	550	0	0	0	897	1,030	1,030	1,030	784

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
BPA Canada															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Priest Rapids CER for Canada															
2 AVWP to BPA	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1
3 COPD to BPA	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 GCPD to BPA	18	12	12	17	17	17	17	17	17	17	17	17	17	17	16
9 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 PGE to BPA	2	4	4	2	2	2	2	2	2	2	2	2	2	2	3
18 PPL to BPA	2	4	4	2	2	2	2	2	2	2	2	2	2	2	3
19 PSE to BPA	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2
20 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 SCL to BPA	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1
22 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 TPU to BPA	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1
24 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 UnknMKT to BPA	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26 Priest Rapids: Regional Totals	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Wanapum CER for Canada															
27 AVWP to BPA	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28 COPD to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 EWEB to BPA	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 GCPD to BPA	10	12	12	16	16	16	17	17	17	17	17	17	17	17	15
34 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 PGE to BPA	5	3	3	2	2	2	2	2	2	2	2	2	2	2	3
43 PPL to BPA	5	3	3	2	2	2	2	2	2	2	2	2	2	2	3
44 PSE to BPA	3	2	2	1	1	1	1	1	1	1	1	1	1	1	2
45 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 SCL to BPA	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1
47 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 TPU to BPA	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1
49 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 UnknMKT to BPA	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
51 Wanapum: Regional Totals	28	28	28	28	28	28	29	29	29	29	29	29	29	29	29

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
BPA Canada															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Priest Rapids CER for Canada															
2 AVWP to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 COPD to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 GCPD to BPA	17	18	18	18	18	18	17	17	17	17	17	17	17	17	17
9 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 PGE to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18 PPL to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19 PSE to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 SCL to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 TPU to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 UnknMKT to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26 Priest Rapids: Regional Totals	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Wanapum CER for Canada															
27 AVWP to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28 COPD to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 GCPD to BPA	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
34 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 PGE to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
43 PPL to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
44 PSE to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
45 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 SCL to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
47 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 TPU to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
49 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 UnknMKT to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
51 Wanapum: Regional Totals	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29

Table A-15: Canadian Entitlement Return For Canada
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Rock Island P.H. #1 CER for Canada															
52 CHPD to BPA	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
53 PSE to BPA	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
54 Rock Island P.H. #1: Regional Totals	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Rock Island P.H. #2 CER for Canada															
55 CHPD to BPA	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
56 PSE to BPA	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
57 Rock Island P.H. #2: Regional Totals	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Rocky Reach CER for Canada															
58 AVWP to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
59 CHPD to BPA	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
60 CLKM to BPA	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
61 DOPD to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
62 PGE to BPA	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
63 PPL to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
64 PSE to BPA	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
65 Rocky Reach: Regional Totals	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
Wells CER for Canada															
66 AVWP to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
67 COLV to BPA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
68 DOPD to BPA	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
69 OKPD to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
70 PGE to BPA	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
71 PPL to BPA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
72 PSE to BPA	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
73 Wells: Regional Totals	25	25	25	25	25	25	24	24	24	24	24	24	24	24	24
Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74 Federal System	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
75 Public Entities	61	61	61	61	61	61	60	60	60	60	60	60	60	60	61
76 Investor-Owned Entities	11	11	11	11	11	11	10	10	10	10	10	10	10	10	11
77 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78 Non-NW Entities	141	141	141	141	141	141	139	139	139	139	139	139	139	139	140
79 Total CER For Canada	141	141	141	141	141	141	139	139	139	139	139	139	139	139	140

Table A-16: Federal Intra-Regional Transfers
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg	
Intra-Regional Transfers																
1 BPA To AVWP WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42	
2 BPA To CCPD PwrS	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
3 BPA To Other Entities	0	0	0	0	0	0	0	0	230	0	0	188	188	0	35	
4 BPA To PPL Caps	183	229	187	211	199	177	173	173	167	174	159	184	184	194	186	
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	35	34	0	0	0	6	
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 BPA To PPL PwrS	108	161	215	189	145	117	90	90	0	18	34	13	13	42	94	
8 BPA To PSE WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42	
9 Other Entities To BPA	16	17	18	17	17	9	7	7	11	13	11	12	12	9	13	
10 PPL To BPA S/Pwr/X	23	23	0	0	0	0	0	0	0	0	0	0	0	23	6	
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12 PPL To BPA PKRepl	183	229	187	211	199	177	173	173	167	174	159	184	184	194	186	
13 Total Contracts	530	877	828	848	780	597	559	559	591	431	413	598	599	479	628	
Total Contracts Out																
14 Federal System	308	609	622	619	564	411	379	379	414	244	243	402	402	253	422	
15 Public Entities	9	10	11	10	10	9	7	7	11	13	11	12	12	9	10	
16 Investor-Owned Entities	213	259	194	218	206	177	173	173	167	174	159	184	184	217	195	
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18 Total Contracts Out	530	877	828	848	780	597	559	559	591	431	413	598	599	479	628	
Total Contracts In																
19 Federal System	222	269	206	229	216	186	180	180	177	187	170	196	197	226	205	
20 Public Entities	17	17	17	17	17	17	17	17	247	17	17	205	205	17	52	
21 Investor-Owned Entities	291	592	605	602	547	394	362	362	167	227	226	197	197	236	370	
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23 Total Contracts In	530	877	828	848	780	597	559	559	591	431	413	598	599	479	628	

Table A-16: Federal Intra-Regional Transfers
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg	
Intra-Regional Transfers																
1 BPA To AVWP WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42	
2 BPA To CCPD PwrS	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
3 BPA To Other Entities	0	0	0	0	0	0	0	0	230	0	0	19	19	0	21	
4 BPA To PPL Caps	183	229	187	211	199	177	173	173	167	174	159	184	184	0	170	
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	35	34	0	0	0	6	
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 BPA To PPL PwrS	108	161	215	189	145	117	90	90	0	18	34	13	13	42	94	
8 BPA To PSE WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42	
9 Other Entities To BPA	7	8	8	8	8	7	6	6	7	9	8	9	9	7	8	
10 PPL To BPA S/Pwr/X	23	23	0	0	0	0	0	0	0	0	0	0	0	23	6	
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12 PPL To BPA PKRepl	183	229	187	211	199	177	173	173	167	174	159	184	184	0	170	
13 Total Contracts	521	868	818	839	770	595	557	557	588	427	410	426	427	89	576	
Total Contracts Out																
14 Federal System	308	609	622	619	564	411	379	379	414	244	243	233	233	59	392	
15 Public Entities	7	8	8	8	8	7	6	6	7	9	8	9	9	7	8	
16 Investor-Owned Entities	206	252	187	211	199	177	173	173	167	174	159	184	184	23	176	
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18 Total Contracts Out	521	868	818	839	770	595	557	557	588	427	410	426	427	89	576	
Total Contracts In																
19 Federal System	213	259	196	219	207	184	179	179	174	183	167	193	194	30	184	
20 Public Entities	17	17	17	17	17	17	17	17	247	17	17	36	36	17	38	
21 Investor-Owned Entities	291	592	605	602	547	394	362	362	167	227	226	197	197	42	354	
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23 Total Contracts In	521	868	818	839	770	595	557	557	588	427	410	426	427	89	576	

Table A-22: BPA Power Sale Contracts
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 1937 Water Year
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Federal Entities															
1 Federal Entities	112	129	143	146	139	127	119	119	112	105	119	120	120	111	124
2 Total Federal Entities	112	129	143	146	139	127	119	119	112	105	119	120	120	111	124
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
4 Total U.S. Bureau of Reclamation	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
Direct Service Industry															
5 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Generating Public Entities															
7 Generating Public Entities	2,108	2,568	2,800	2,795	2,808	2,555	2,185	2,185	2,080	1,838	1,966	2,025	2,025	2,165	2,325
8 Total Generating Public Entities	2,108	2,568	2,800	2,795	2,808	2,555	2,185	2,185	2,080	1,838	1,966	2,025	2,025	2,165	2,325
Generating Public Entities (Slice)															
9 Generating Public Entities (Slice)	966	1,200	1,089	1,095	977	849	726	840	1,220	1,051	1,033	1,120	953	942	1,020
10 Total Generating Public Entities (Slice)	966	1,200	1,089	1,095	977	849	726	840	1,220	1,051	1,033	1,120	953	942	1,020
Non-Generating Public Entities															
11 Non-Generating Public Entities	2,945	3,397	3,778	3,852	3,675	3,221	3,098	3,098	3,081	3,223	3,415	3,300	3,300	3,018	3,333
12 Total Non-Generating Public Entities	2,945	3,397	3,778	3,852	3,675	3,221	3,098	3,098	3,081	3,223	3,415	3,300	3,300	3,018	3,333
Non-Generating Public Entities (Slice)															
13 Non-Generating Public Entities (Slice)	580	721	654	657	586	510	436	504	733	631	620	673	572	566	613
14 Total Non-Generating Public Entities (Slice)	580	721	654	657	586	510	436	504	733	631	620	673	572	566	613
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	112	129	143	146	139	127	119	119	112	105	119	120	120	111	124
20 U.S. Bureau of Reclamation	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
21 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Generating Public Entities	3,074	3,769	3,890	3,889	3,784	3,404	2,911	3,025	3,300	2,890	2,999	3,146	2,978	3,107	3,345
23 Non-Generating Public Entities	3,525	4,118	4,432	4,509	4,261	3,731	3,534	3,603	3,813	3,854	4,035	3,973	3,872	3,583	3,946
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Total Power Sales Contracts	6,807	8,031	8,497	8,615	8,264	7,313	6,791	6,973	7,521	7,146	7,476	7,507	7,240	7,031	7,580

Table A-22: BPA Power Sale Contracts
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 1937 Water Year
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Federal Entities															
1 Federal Entities	114	132	146	147	140	128	120	120	113	106	106	120	121	112	125
2 Total Federal Entities	114	132	146	147	140	128	120	120	113	106	106	120	121	112	125
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
4 Total U.S. Bureau of Reclamation	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
Direct Service Industry															
5 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Generating Public Entities															
7 Generating Public Entities	2,111	2,575	2,809	2,808	2,823	2,566	2,195	2,195	2,088	1,846	1,975	2,035	2,035	2,174	2,334
8 Total Generating Public Entities	2,111	2,575	2,809	2,808	2,823	2,566	2,195	2,195	2,088	1,846	1,975	2,035	2,035	2,174	2,334
Generating Public Entities (Slice)															
9 Generating Public Entities (Slice)	973	1,208	1,096	1,102	984	856	666	704	1,085	916	1,021	1,123	955	944	992
10 Total Generating Public Entities (Slice)	973	1,208	1,096	1,102	984	856	666	704	1,085	916	1,021	1,123	955	944	992
Non-Generating Public Entities															
11 Non-Generating Public Entities	3,008	3,467	3,851	3,924	3,753	3,283	3,158	3,158	3,140	3,285	3,482	3,352	3,352	3,070	3,398
12 Total Non-Generating Public Entities	3,008	3,467	3,851	3,924	3,753	3,283	3,158	3,158	3,140	3,285	3,482	3,352	3,352	3,070	3,398
Non-Generating Public Entities (Slice)															
13 Non-Generating Public Entities (Slice)	584	725	658	662	591	514	400	423	651	550	613	674	574	567	596
14 Total Non-Generating Public Entities (Slice)	584	725	658	662	591	514	400	423	651	550	613	674	574	567	596
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	114	132	146	147	140	128	120	120	113	106	106	120	121	112	125
20 U.S. Bureau of Reclamation	96	14	31	70	79	50	227	227	296	297	323	269	269	228	165
21 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Generating Public Entities	3,084	3,783	3,905	3,910	3,806	3,422	2,861	2,900	3,173	2,762	2,996	3,158	2,991	3,119	3,326
23 Non-Generating Public Entities	3,592	4,192	4,510	4,586	4,344	3,797	3,558	3,581	3,792	3,835	4,095	4,026	3,926	3,637	3,994
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Total Power Sales Contracts	6,885	8,122	8,592	8,714	8,369	7,397	6,766	6,827	7,373	7,000	7,534	7,574	7,306	7,096	7,610

Table A-24: Federal NUG Resources By Project And Project Type
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg		
NUG: Hydro																	
1 Dworshak/Cleanwater Small Hydropower	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
2 Elwha Hydro	4	10	11	12	9	9	17	17	9	8	5	8	8	8	2	9	
3 Glines Canyon Hydro	7	14	16	15	14	14	25	25	30	16	11	16	15	4	15	15	
4 Total NUG: Hydro	13	26	30	29	26	25	45	45	41	27	19	27	25	9	26	26	
NUG: Renewables																	
5 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total NUG: Renewables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-Utility Generating Resources	13	26	30	29	26	25	45	45	41	27	19	27	25	9	26	26	
8 Federal Entities																	

Table A-24: Federal NUG Resources By Project And Project Type
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Energy in Megawatts	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg		
NUG: Hydro																	
1 Dworshak/Cleanwater Small Hydropower	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
2 Elwha Hydro	4	10	11	12	9	9	17	17	9	8	5	8	8	8	2	9	
3 Glines Canyon Hydro	7	14	16	15	14	14	25	25	30	16	11	16	15	4	15	15	
4 Total NUG: Hydro	13	26	30	29	26	25	45	45	41	27	19	27	25	9	26	26	
NUG: Renewables																	
5 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total NUG: Renewables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-Utility Generating Resources	13	26	30	29	26	25	45	45	41	27	19	27	25	9	26	26	
8 Federal Entities																	

HLH MWhs ANALYSIS

2.5 FEDERAL LOADS AND RESOURCES STUDY-HLH MWhs ANALYSIS
Monthly HLH MWhs Energy
For FY 2010 and 2011

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Table A-2: Federal Exports
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Exports East of Continental Divide															
1 BPA to Other Entities	18,562	18,864	22,709	22,755	18,785	20,033	8,785	8,785	16,902	18,212	19,835	9,643	11,117	16,256	231,245
2 Total Exports to ECD	18,562	18,864	22,709	22,755	18,785	20,033	8,785	8,785	16,902	18,212	19,835	9,643	11,117	16,256	231,245
Exports to Pacific Southwest															
3 BPA to PASA C/NX	0	0	0	0	0	0	0	0	0	0	3,318	1,606	1,713	3,211	9,848
4 BPA to PASA S/NX	0	0	0	0	0	0	0	0	1,659	1,606	0	0	0	0	3,265
5 BPA to RVSD CapS	0	3,360	3,680	3,360	3,200	3,680	1,760	1,760	4,830	0	0	0	0	0	25,630
6 BPA to RVSD C/NX	5,060	0	0	0	0	0	0	0	0	0	0	0	0	0	5,060
7 BPA to RVSD C/NX	7,920	1,890	2,070	1,890	1,800	2,070	990	990	0	0	7,920	3,600	4,320	7,920	43,380
8 BPA to RVSD SPwr/X	0	0	0	0	0	0	0	0	11,340	11,880	0	0	0	0	23,220
9 BPA NW-SW Intertie Losses	389	158	173	158	150	173	83	83	535	405	337	156	181	334	3,312
10 Total Exports To PSW	13,369	5,408	5,923	5,408	5,150	5,923	2,833	2,833	18,364	13,890	11,575	5,362	6,214	11,465	113,714
Exports to Inland Southwest															
11 BPA to SPP PwrS	19,440	17,280	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	31,200	14,400	16,800	30,000	294,960
12 Total Exports To ISW	19,440	17,280	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	31,200	14,400	16,800	30,000	294,960
Exports to Canada															
13 BPA to BCHP CanEnt	422,490	408,312	421,922	421,922	381,091	421,922	203,589	204,156	421,922	408,312	421,922	189,720	202,368	379,440	4,909,090
14 Total Exports To Canada	422,490	408,312	421,922	421,922	381,091	421,922	203,589	204,156	421,922	408,312	421,922	189,720	202,368	379,440	4,909,090
Exports to Other Entities															
15 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports	473,861	449,863	469,274	468,085	422,306	467,318	230,807	231,374	487,189	471,615	484,533	219,125	236,498	437,161	5,549,009
16 Federal Entities															

Table A-2: Federal Exports
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Exports East of Continental Divide															
1 BPA to Other Entities	18,767	19,060	22,908	22,950	18,984	20,234	8,884	8,884	17,102	18,419	20,676	10,102	10,865	16,451	234,286
2 Total Exports to ECD	18,767	19,060	22,908	22,950	18,984	20,234	8,884	8,884	17,102	18,419	20,676	10,102	10,865	16,451	234,286
Exports to Pacific Southwest															
3 BPA to PASA C/NX	0	0	0	0	0	0	0	0	0	0	3,318	1,606	1,713	3,211	9,848
4 BPA to PASA S/NX	0	0	0	0	0	0	0	0	1,659	1,606	0	0	0	0	3,265
5 BPA to RVSD C/NX	7,560	1,980	2,070	1,890	1,800	2,070	990	900	0	0	7,560	3,960	4,320	7,560	42,660
6 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	11,880	11,880	0	0	0	0	23,760
7 BPA NW-SW Inertie Losses	227	59	62	57	54	62	30	27	406	405	326	167	181	323	2,386
8 Total Exports To PSW	7,787	2,039	2,132	1,947	1,854	2,132	1,020	927	13,945	13,890	11,205	5,733	6,214	11,094	81,918
Exports to Inland Southwest															
9 BPA to SPP PwrS	18,720	18,000	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	30,000	15,600	16,800	30,000	294,960
10 Total Exports To ISW	18,720	18,000	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	30,000	15,600	16,800	30,000	294,960
Exports to Canada															
11 BPA to BCHP CanEnt	392,615	379,440	392,088	392,088	354,144	392,088	189,193	189,720	392,088	379,440	392,088	186,120	198,528	372,240	4,601,880
12 Total Exports To Canada	392,615	379,440	392,088	392,088	354,144	392,088	189,193	189,720	392,088	379,440	392,088	186,120	198,528	372,240	4,601,880
Exports to Other Entities															
13 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports	437,888	418,540	435,848	434,985	392,262	433,894	214,697	215,131	453,135	442,950	453,968	217,555	232,407	429,785	5,213,045
14 Federal Entities															

Table A-5: Federal Imports
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Imports From East of Continental Divide															
1 PPL to BPA PwrS	46,742	64,320	93,010	78,541	55,680	50,501	18,637	18,637	42	7,571	14,602	2,477	2,890	17,514	471,162
2 Total Imports From ECD	46,742	64,320	93,010	78,541	55,680	50,501	18,637	18,637	42	7,571	14,602	2,477	2,890	17,514	471,162
Imports From Pacific Southwest															
3 PASA to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 RVSD to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 RVSD to BPA S/Pwr/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Total Imports From PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imports From Inland Southwest															
13 SPP to BPA PwrS	19,440	17,280	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	31,200	14,400	16,800	30,000	294,960
14 Total Imports From ISW	19,440	17,280	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	31,200	14,400	16,800	30,000	294,960
Imports From Canada															
15 BCHP to BPA PwrS	432	400	432	416	384	432	208	208	416	416	432	192	224	416	5,008
16 Total Imports From Canada	432	400	432	416	384	432	208	208	416	416	432	192	224	416	5,008
Imports From Other Entities															
17 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Imports	66,614	82,000	112,162	96,957	73,344	70,373	34,445	34,445	30,458	39,187	46,234	17,069	19,914	47,930	771,130
18 Federal System															

Table A-5: Federal Imports
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Imports From East of Continental Divide															
1 PPL to BPA PwrS	45,011	66,893	93,010	78,541	55,680	50,501	18,637	18,637	42	7,571	14,061	2,683	2,890	17,514	471,669
2 Total Imports From ECD	45,011	66,893	93,010	78,541	55,680	50,501	18,637	18,637	42	7,571	14,061	2,683	2,890	17,514	471,669
Imports From Pacific Southwest															
3 PASA to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 PASA to BPA SINX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 RVSD to BPA XchgNrg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 RVSD to BPA S/Pwr/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 RVSD to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Total Imports From PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imports From Inland Southwest															
10 SPP to BPA PwrS	18,720	18,000	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	30,000	15,600	16,800	30,000	294,960
11 Total Imports From ISW	18,720	18,000	18,720	18,000	17,280	19,440	15,600	15,600	30,000	31,200	30,000	15,600	16,800	30,000	294,960
Imports From Canada															
12 BChP to BPA PwrS	416	416	432	416	384	432	208	208	416	416	416	208	224	416	5,008
13 Total Imports From Canada	416	416	432	416	384	432	208	208	416	416	416	208	224	416	5,008
Imports From Other Entities															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Imports	64,147	85,309	112,162	96,957	73,344	70,373	34,445	34,445	30,458	39,187	44,477	18,491	19,914	47,930	771,637
15 Federal System															

Table A-8: Federal Renewable Resources
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal System															
1 Condon Wind Project	4,536	5,078	5,071	4,473	3,182	6,362	1,965	1,960	3,746	3,343	3,317	1,458	1,702	3,432	49,626
2 Foote Creek 1	2,594	2,695	3,419	3,667	2,969	2,760	1,196	1,196	2,042	1,822	1,026	639	746	1,752	28,524
3 Foote Creek 2	190	294	304	556	423	278	211	211	235	250	172	54	64	136	3,378
4 Foote Creek 4	2,083	3,180	3,230	3,800	3,685	2,595	1,426	1,426	2,112	2,258	1,885	619	722	1,464	30,485
5 Georgia-Pacific Paper (Wauna)	9,629	9,466	10,858	10,976	10,207	11,184	5,267	5,267	8,848	5,104	8,491	3,863	4,507	8,304	111,970
6 Klondike I	3,015	1,957	1,415	1,438	1,792	3,780	1,544	1,544	4,461	3,954	4,497	1,617	1,887	3,065	35,966
7 Klondike III	5,565	4,064	2,853	2,544	3,733	7,713	3,354	3,087	8,823	6,978	9,280	3,759	4,048	6,309	72,110
8 StateLine Wind Project	7,826	8,420	6,971	6,482	3,608	14,324	4,403	4,403	9,102	7,911	7,706	3,199	3,732	7,621	95,708
9 Total Federal System	35,438	35,154	34,121	33,936	29,597	48,998	19,366	19,094	39,369	31,619	36,373	15,209	17,409	32,083	427,767
Renewable Resources															
10 Federal System	35,438	35,154	34,121	33,936	29,597	48,998	19,366	19,094	39,369	31,619	36,373	15,209	17,409	32,083	427,767
11 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Total Renewable Resources	35,438	35,154	34,121	33,936	29,597	48,998	19,366	19,094	39,369	31,619	36,373	15,209	17,409	32,083	427,767

Table A-8: Federal Renewable Resources
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal System															
1 Condon Wind Project	4,536	5,078	5,071	4,473	3,182	6,362	1,965	1,960	3,746	3,343	3,317	1,521	1,639	3,432	49,626
2 Foote Creek 1	2,594	2,695	3,419	3,667	2,969	2,760	1,196	1,196	2,042	1,822	1,026	667	718	1,752	28,524
3 Foote Creek 2	190	294	304	556	423	278	211	211	235	250	172	57	61	136	3,378
4 Foote Creek 4	2,083	3,180	3,230	3,800	3,685	2,595	1,426	1,426	2,112	2,258	1,885	646	695	1,464	30,485
5 Georgia-Pacific Paper (Wauna)	9,273	9,860	10,858	10,976	10,207	11,184	5,267	5,267	8,848	5,104	8,164	4,185	4,507	8,304	112,003
6 Klondike I	3,015	1,957	1,415	1,438	1,792	3,780	1,544	1,544	4,461	3,954	4,497	1,687	1,817	3,065	35,966
7 Klondike III	5,565	4,064	2,853	2,544	3,733	7,713	3,354	3,087	8,823	6,978	9,280	3,759	4,048	6,309	72,110
8 StateLine Wind Project	7,826	8,420	6,971	6,482	3,608	14,324	4,403	4,403	9,102	7,911	7,706	3,338	3,594	7,621	95,708
9 Total Federal System	35,082	35,548	34,121	33,936	29,597	48,998	19,366	19,094	39,369	31,619	36,046	15,860	17,080	32,083	427,800
Renewable Resources															
10 Federal System	35,082	35,548	34,121	33,936	29,597	48,998	19,366	19,094	39,369	31,619	36,046	15,860	17,080	32,083	427,800
11 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Total Renewable Resources	35,082	35,548	34,121	33,936	29,597	48,998	19,366	19,094	39,369	31,619	36,046	15,860	17,080	32,083	427,800

Table A-10: Federal Large Thermal
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	444,960	395,520	428,480	412,000	395,520	444,960	214,240	214,240	412,000	428,480	428,480	197,760	230,720	412,000	5,059,360
2 Columbia Generating Station: Regiona	444,960	395,520	428,480	412,000	395,520	444,960	214,240	214,240	412,000	428,480	428,480	197,760	230,720	412,000	5,059,360
Total Large Thermal															
3 Federal System	444,960	395,520	428,480	412,000	395,520	444,960	214,240	214,240	412,000	428,480	428,480	197,760	230,720	412,000	5,059,360

Table A-10: Federal Large Thermal
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	444,960	395,520	428,480	412,000	395,520	444,960	214,240	214,240	412,000	428,480	428,480	197,760	230,720	412,000	5,059,360
2 Columbia Generating Station: Regiona	444,960	395,520	428,480	412,000	395,520	444,960	214,240	214,240	412,000	428,480	428,480	197,760	230,720	412,000	5,059,360
Total Large Thermal															
3 Federal System	444,960	395,520	428,480	412,000	395,520	444,960	214,240	214,240	412,000	428,480	428,480	197,760	230,720	412,000	5,059,360

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Table A-15: Canadian Entitlement Return For Canada
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
BPA Canada															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Priest Rapids CER for Canada															
2 AVWP to BPA	720	1,117	1,152	786	710	785	392	392	810	784	810	392	418	784	10,049
3 COPD to BPA	334	570	588	588	531	587	293	293	606	587	606	293	313	587	6,777
4 CWPC to BPA	24	23	24	24	22	24	12	12	25	24	25	12	13	24	289
5 EWEB to BPA	202	313	323	219	198	219	109	109	226	219	226	109	117	219	2,809
6 FGRV to BPA	77	89	92	92	83	92	46	46	95	92	95	46	49	92	1,087
7 FREC to BPA	31	30	31	31	28	31	15	15	32	31	32	15	16	31	367
8 GCPD to BPA	13,608	8,733	9,012	12,596	11,377	12,579	6,281	6,281	12,980	12,562	12,980	6,281	6,699	12,562	144,530
9 ICLP to BPA	9	9	9	9	8	9	4	4	9	9	9	4	5	9	105
10 KITT to BPA	61	30	31	31	28	31	15	15	32	31	32	15	16	31	398
11 KOOT to BPA	42	40	42	42	38	42	21	21	43	42	43	21	22	42	499
12 LREC to BPA	7	6	7	7	6	7	3	3	7	7	7	3	4	7	79
13 LVE to BPA	55	53	55	55	50	55	27	27	57	55	57	27	29	55	656
14 MCMN to BPA	77	89	92	92	83	92	46	46	95	92	95	46	49	92	1,087
15 MTRF to BPA	77	89	92	92	83	92	46	46	95	92	95	46	49	92	1,087
16 NLEC to BPA	37	36	37	37	34	37	19	19	38	37	38	19	20	37	446
17 PGE to BPA	1,642	2,546	2,627	1,791	1,618	1,789	893	893	1,846	1,786	1,846	893	953	1,786	22,907
18 PPL to BPA	1,642	2,546	2,627	1,791	1,618	1,789	893	893	1,846	1,786	1,846	893	953	1,786	22,907
19 PSE to BPA	946	1,468	1,514	1,032	932	1,030	514	514	1,063	1,029	1,063	514	549	1,029	13,197
20 RREC to BPA	9	9	9	9	8	9	4	4	9	9	9	4	5	9	105
21 SCL to BPA	119	1,406	1,451	968	874	967	483	483	997	965	997	483	515	965	11,672
22 SLEC to BPA	7	6	7	7	6	7	3	3	7	7	7	3	4	7	79
23 TPU to BPA	889	1,406	1,451	974	880	973	486	486	1,004	972	1,004	486	518	972	12,502
24 UNEC to BPA	15	15	15	15	14	15	8	8	16	15	16	8	8	15	184
25 UnknMKT to BPA	1,319	638	658	658	595	658	328	328	679	657	679	328	350	657	8,532
26 Priest Rapids: Regional Totals	21,946	21,267	21,946	21,946	19,822	21,916	10,943	10,943	22,615	21,886	22,615	10,943	11,672	21,886	262,347

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Wanapum CER for Canada															
27 AVWP to BPA	1,720	1,067	1,101	751	678	750	375	375	775	750	775	375	400	750	10,644
28 COPD to BPA	566	545	562	562	508	562	281	281	580	562	580	281	299	562	6,731
29 CWPC to BPA	0	22	23	23	21	23	12	12	24	23	24	12	12	23	253
30 EWEB to BPA	483	299	308	210	190	210	105	105	217	210	217	105	112	210	2,977
31 FGRV to BPA	147	85	88	88	80	88	44	44	91	88	91	44	47	88	1,113
32 FREC to BPA	0	28	29	29	27	29	15	15	30	29	30	15	16	29	322
33 GCPD to BPA	7,658	8,348	8,615	12,041	10,876	12,025	6,012	6,012	12,425	12,024	12,425	6,012	6,413	12,024	132,911
34 ICLP to BPA	0	8	8	8	8	8	4	4	9	8	9	4	4	8	92
35 KITT to BPA	0	28	29	29	27	29	15	15	30	29	30	15	16	29	322
36 KOOT to BPA	0	39	40	40	36	40	20	20	41	40	41	20	21	40	437
37 LREC to BPA	0	6	6	6	6	6	3	3	6	6	6	3	3	6	69
38 LVE to BPA	0	51	52	52	47	52	26	26	54	52	54	26	28	52	575
39 MCMN to BPA	147	85	88	88	80	88	44	44	91	88	91	44	47	88	1,113
40 MTRF to BPA	147	85	88	88	80	88	44	44	91	88	91	44	47	88	1,113
41 NLEC to BPA	0	35	36	36	32	36	18	18	37	36	37	18	19	36	391
42 PGE to BPA	3,923	2,434	2,511	1,712	1,546	1,710	855	855	1,767	1,710	1,767	855	912	1,710	24,266
43 PPL to BPA	3,923	2,434	2,511	1,712	1,546	1,710	855	855	1,767	1,710	1,767	855	912	1,710	24,266
44 PSE to BPA	2,266	1,403	1,448	986	891	985	492	492	1,018	985	1,018	492	525	985	13,985
45 RREC to BPA	0	8	8	8	8	8	4	4	9	8	9	4	4	8	92
46 SCL to BPA	0	1,344	1,387	925	836	924	462	462	955	924	955	462	493	924	11,052
47 SLEC to BPA	0	6	6	6	6	6	3	3	6	6	6	3	3	6	69
48 TPU to BPA	0	1,344	1,387	932	841	930	465	465	961	930	961	465	496	930	11,109
49 UNEC to BPA	0	14	15	15	13	15	7	7	15	15	15	7	8	15	161
50 UnknMKT to BPA	0	610	629	629	569	629	314	314	650	629	650	314	335	629	6,900
51 Wanapum: Regional Totals	20,981	20,330	20,979	20,979	18,949	20,951	10,475	10,475	21,648	20,950	21,648	10,475	11,173	20,950	250,962

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Rock Island P.H. #1 CER for Canada															
52 CHPD to BPA	4,055	3,929	4,055	4,055	3,662	4,049	2,016	2,016	4,166	4,032	4,166	2,016	2,150	4,032	48,401
53 PSE to BPA	4,055	3,929	4,055	4,055	3,662	4,049	2,016	2,016	4,166	4,032	4,166	2,016	2,150	4,032	48,401
54 Rock Island P.H. #1: Regional Totals	8,110	7,859	8,110	8,110	7,325	8,099	4,032	4,032	8,333	8,064	8,333	4,032	4,301	8,064	96,802
Rock Island P.H. #2 CER for Canada															
55 CHPD to BPA	2,597	2,516	2,597	2,597	2,345	2,593	1,294	1,294	2,675	2,588	2,675	1,294	1,380	2,588	31,034
56 PSE to BPA	2,597	2,516	2,597	2,597	2,345	2,593	1,294	1,294	2,675	2,588	2,675	1,294	1,380	2,588	31,034
57 Rock Island P.H. #2: Regional Totals	5,193	5,033	5,193	5,193	4,691	5,186	2,588	2,588	5,349	5,177	5,349	2,588	2,761	5,177	62,067
Rocky Reach CER for Canada															
58 AVWP to BPA	800	776	800	800	723	799	400	400	826	800	826	400	427	800	9,578
59 CHPD to BPA	4,168	4,039	4,168	4,168	3,765	4,162	2,082	2,082	4,303	4,164	4,303	2,082	2,221	4,164	49,870
60 CLKM to BPA	6,349	6,152	6,349	6,349	5,734	6,340	3,171	3,171	6,554	6,342	6,554	3,171	3,383	6,342	75,961
61 DOPD to BPA	745	722	745	745	673	744	372	372	769	745	769	372	397	745	8,917
62 PGE to BPA	3,340	3,237	3,340	3,340	3,017	3,335	1,668	1,668	3,448	3,337	3,448	1,668	1,780	3,337	39,962
63 PPL to BPA	1,463	1,418	1,463	1,463	1,321	1,461	731	731	1,510	1,462	1,510	731	779	1,462	17,504
64 PSE to BPA	10,737	10,405	10,737	10,737	9,698	10,723	5,364	5,364	11,085	10,727	11,085	5,364	5,721	10,727	128,474
65 Rocky Reach: Regional Totals	27,602	26,749	27,602	27,602	24,931	27,565	13,788	13,788	28,495	27,576	28,495	13,788	14,707	27,576	330,266
Wells CER for Canada															
66 AVWP to BPA	596	578	596	596	539	596	297	297	614	594	614	297	317	594	7,125
67 COLV to BPA	804	779	804	804	726	802	400	400	827	800	827	400	427	800	9,599
68 DOPD to BPA	5,116	4,958	5,116	5,116	4,621	5,109	2,548	2,548	5,265	5,095	5,265	2,548	2,717	5,095	61,115
69 OKPD to BPA	1,364	1,322	1,364	1,364	1,232	1,362	679	679	1,404	1,359	1,404	679	725	1,359	16,297
70 PGE to BPA	3,462	3,355	3,462	3,462	3,127	3,458	1,724	1,724	3,563	3,448	3,563	1,724	1,839	3,448	41,362
71 PPL to BPA	1,177	1,140	1,177	1,177	1,063	1,175	586	586	1,211	1,172	1,211	586	625	1,172	14,057
72 PSE to BPA	5,337	5,172	5,337	5,337	4,821	5,330	2,658	2,658	5,493	5,316	5,493	2,658	2,835	5,316	63,760
73 Wells: Regional Totals	17,856	17,304	17,856	17,856	16,128	17,832	8,892	8,892	18,377	17,784	18,377	8,892	9,485	17,784	213,314
Total CER For Canada															
74 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75 Public Entities	43,673	43,601	44,992	49,924	45,093	49,857	24,897	24,897	51,455	49,795	51,455	24,897	26,557	49,795	580,889
76 Investor-Owned Entities	50,347	47,541	49,058	44,125	39,855	44,066	22,007	22,007	45,481	44,014	45,481	22,007	23,474	44,014	543,476
77 Other Entities	7,668	7,400	7,636	7,636	6,897	7,626	3,814	3,814	7,882	7,628	7,882	3,814	4,068	7,628	91,393
78 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79 Total CER For Canada	101,688	98,542	101,686	101,686	91,845	101,549	50,718	50,718	104,818	101,437	104,818	50,718	54,099	101,437	1,215,758

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
BPA Canada															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Priest Rapids CER for Canada															
2 AWPP to BPA	810	776	801	801	723	800	384	384	793	767	793	384	409	767	9,390
3 COPD to BPA	606	587	606	606	547	605	290	290	600	581	600	290	310	581	7,102
4 CWPC to BPA	25	24	25	25	22	25	12	12	25	24	25	12	13	24	291
5 EWEB to BPA	226	217	224	224	202	224	107	107	222	215	222	107	114	215	2,626
6 FGRV to BPA	95	92	95	95	86	95	46	46	94	91	94	46	49	91	1,113
7 FREC to BPA	32	31	32	32	29	32	15	15	31	30	31	15	16	30	371
8 GCPD to BPA	12,980	12,662	13,066	13,066	11,802	13,049	6,260	6,260	12,937	12,520	12,937	6,260	6,677	12,520	152,997
9 ICPL to BPA	9	9	9	9	8	9	4	4	9	9	9	4	5	9	106
10 KITT to BPA	32	31	32	32	29	32	15	15	31	30	31	15	16	30	371
11 KOOT to BPA	43	42	43	43	39	43	21	21	43	41	43	21	22	41	503
12 LREC to BPA	7	7	7	7	6	7	3	3	7	7	7	3	3	7	79
13 LVE to BPA	57	55	57	57	51	56	27	27	56	54	56	27	29	54	662
14 MCMN to BPA	95	92	95	95	86	95	46	46	94	91	94	46	49	91	1,113
15 MTRF to BPA	95	92	95	95	86	95	46	46	94	91	94	46	49	91	1,113
16 NLEC to BPA	38	37	38	38	35	38	18	18	38	37	38	18	20	37	450
17 PGE to BPA	1,846	1,769	1,825	1,825	1,649	1,823	874	874	1,807	1,749	1,807	874	933	1,749	21,405
18 PPL to BPA	1,846	1,769	1,825	1,825	1,649	1,823	874	874	1,807	1,749	1,807	874	933	1,749	21,405
19 PSE to BPA	1,063	1,019	1,052	1,052	950	1,050	504	504	1,041	1,008	1,041	504	537	1,008	12,333
20 RREC to BPA	9	9	9	9	8	9	4	4	9	9	9	4	5	9	106
21 SCL to BPA	997	956	986	986	891	985	472	472	976	945	976	472	504	945	11,565
22 SLEC to BPA	7	7	7	7	6	7	3	3	7	7	7	3	3	7	79
23 TPU to BPA	1,004	962	993	993	897	992	476	476	983	951	983	476	507	951	11,644
24 UNEC to BPA	16	15	16	16	14	16	8	8	16	15	16	8	8	15	185
25 UnknMKT to BPA	679	658	679	679	613	678	325	325	672	650	672	325	347	650	7,950
26 Priest Rapids: Regional Totals	22,615	21,916	22,615	22,615	20,427	22,585	10,835	10,835	22,392	21,670	22,392	10,835	11,557	21,670	264,960

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Wanapum CER for Canada															
27 AVWP to BPA	775	743	766	766	692	765	366	366	756	732	756	366	390	732	8,970
28 COPD to BPA	580	562	580	580	524	579	277	277	572	554	572	277	295	554	6,785
29 CWPC to BPA	24	23	24	24	22	24	11	11	23	23	23	11	12	23	278
30 EWEB to BPA	217	208	214	214	194	214	102	102	211	205	211	102	109	205	2,508
31 FGRV to BPA	91	88	91	91	82	91	43	43	90	87	90	43	46	87	1,063
32 FREC to BPA	30	29	30	30	27	30	14	14	30	29	30	14	15	29	354
33 GCPD to BPA	12,425	12,121	12,507	12,507	11,297	12,491	5,969	5,969	12,336	11,938	12,336	5,969	6,367	11,938	146,168
34 ICLP to BPA	9	8	9	9	8	9	4	4	9	8	9	4	4	8	101
35 KITT to BPA	30	29	30	30	27	30	14	14	30	29	30	14	15	29	354
36 KOOT to BPA	41	40	41	41	37	41	20	20	41	39	41	20	21	39	481
37 LREC to BPA	6	6	6	6	6	6	3	3	6	6	6	3	3	6	76
38 LVE to BPA	54	52	54	54	49	54	26	26	53	52	53	26	28	52	633
39 MCMN to BPA	91	88	91	91	82	91	43	43	90	87	90	43	46	87	1,063
40 MTRF to BPA	91	88	91	91	82	91	43	43	90	87	90	43	46	87	1,063
41 NLEC to BPA	37	36	37	37	33	37	18	18	36	35	36	18	19	35	430
42 PGE to BPA	1,767	1,693	1,747	1,747	1,578	1,745	834	834	1,723	1,668	1,723	834	889	1,668	20,449
43 PPL to BPA	1,767	1,693	1,747	1,747	1,578	1,745	834	834	1,723	1,668	1,723	834	889	1,668	20,449
44 PSE to BPA	1,018	976	1,007	1,007	909	1,005	480	480	993	961	993	480	512	961	11,783
45 RREC to BPA	9	8	9	9	8	9	4	4	9	8	9	4	4	8	101
46 SCL to BPA	955	915	944	944	853	943	450	450	931	901	931	450	481	901	11,049
47 SLEC to BPA	6	6	6	6	6	6	3	3	6	6	6	3	3	6	76
48 TPU to BPA	961	921	950	950	858	949	454	454	937	907	937	454	484	907	11,125
49 UNEC to BPA	15	15	15	15	14	15	7	7	15	14	15	7	8	14	177
50 UnknMKT to BPA	650	629	650	650	587	649	310	310	641	620	641	310	331	620	7,595
51 Wanapum: Regional Totals	21,648	20,979	21,648	21,648	19,553	21,619	10,331	10,331	21,351	20,662	21,351	10,331	11,020	20,662	253,134

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Rock Island P.H. #1 CER for Canada															
52 CHPD to BPA	4,166	4,038	4,166	4,166	3,763	4,161	1,998	1,998	4,129	3,996	4,129	1,998	2,131	3,996	48,836
53 PSE to BPA	4,166	4,038	4,166	4,166	3,763	4,161	1,998	1,998	4,129	3,996	4,129	1,998	2,131	3,996	48,836
54 Rock Island P.H. #1: Regional Totals	8,333	8,075	8,333	8,333	7,526	8,322	3,996	3,996	8,258	7,992	8,258	3,996	4,262	7,992	97,673
Rock Island P.H. #2 CER for Canada															
55 CHPD to BPA	2,675	2,592	2,675	2,675	2,416	2,671	1,278	1,278	2,641	2,556	2,641	1,278	1,363	2,556	31,295
56 PSE to BPA	2,675	2,592	2,675	2,675	2,416	2,671	1,278	1,278	2,641	2,556	2,641	1,278	1,363	2,556	31,295
57 Rock Island P.H. #2: Regional Totals	5,349	5,184	5,349	5,349	4,832	5,342	2,556	2,556	5,282	5,112	5,282	2,556	2,726	5,112	62,589
Rocky Reach CER for Canada															
58 AVWP to BPA	826	801	826	826	746	825	395	395	816	789	816	395	421	789	9,666
59 CHPD to BPA	4,303	4,170	4,303	4,303	3,886	4,297	2,055	2,055	4,247	4,110	4,247	2,055	2,192	4,110	50,330
60 CLKM to BPA	6,554	6,351	6,554	6,554	5,920	6,545	3,130	3,130	6,468	6,260	6,468	3,130	3,338	6,260	76,662
61 DOPD to BPA	769	746	769	769	695	768	367	367	759	735	759	367	392	735	8,999
62 PGE to BPA	3,448	3,341	3,448	3,448	3,114	3,443	1,647	1,647	3,403	3,293	3,403	1,647	1,756	3,293	40,331
63 PPL to BPA	1,510	1,464	1,510	1,510	1,364	1,508	721	721	1,491	1,442	1,491	721	769	1,442	17,666
64 PSE to BPA	11,085	10,742	11,085	11,085	10,012	11,070	5,294	5,294	10,940	10,587	10,940	5,294	5,646	10,587	129,658
65 Rocky Reach: Regional Totals	28,495	27,614	28,495	28,495	25,738	28,457	13,608	13,608	28,123	27,216	28,123	13,608	14,515	27,216	333,312
Wells CER for Canada															
66 AVWP to BPA	614	595	614	614	554	613	293	293	606	587	606	293	313	587	7,183
67 COLV to BPA	827	801	827	827	747	826	395	395	817	791	817	395	422	791	9,677
68 DOPD to BPA	5,265	5,102	5,265	5,265	4,755	5,258	2,517	2,517	5,201	5,033	5,201	2,517	2,684	5,033	61,613
69 OKPD to BPA	1,404	1,361	1,404	1,404	1,268	1,402	671	671	1,387	1,342	1,387	671	716	1,342	16,430
70 PGE to BPA	3,563	3,453	3,563	3,563	3,218	3,558	1,703	1,703	3,520	3,406	3,520	1,703	1,817	3,406	41,699
71 PPL to BPA	1,211	1,174	1,211	1,211	1,094	1,209	579	579	1,196	1,158	1,196	579	617	1,158	14,172
72 PSE to BPA	5,493	5,323	5,493	5,493	4,961	5,485	2,626	2,626	5,426	5,251	5,426	2,626	2,801	5,251	64,280
73 Wells: Regional Totals	18,377	17,809	18,377	18,377	16,598	18,352	8,784	8,784	18,154	17,568	18,154	8,784	9,370	17,568	215,054
Total CER For Canada															
74 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75 Public Entities	51,455	49,980	51,574	51,574	46,583	51,505	24,662	24,662	50,968	49,324	50,968	24,662	26,306	49,324	603,546
76 Investor-Owned Entities	45,481	43,959	45,362	45,362	40,972	45,301	21,683	21,683	44,812	43,366	44,812	21,683	23,129	43,366	530,970
77 Other Entities	7,882	7,638	7,882	7,882	7,119	7,871	3,765	3,765	7,781	7,530	7,781	3,765	4,016	7,530	92,206
78 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79 Total CER For Canada	104,818	101,577	104,818	104,818	94,674	104,677	50,110	50,110	103,560	100,220	103,560	50,110	53,451	100,220	1,226,722

Table A-16: Federal Intra-Regional Transfers
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Intra-Regional Transfers															
1 BPA To AVWP WP3Set	0	32,800	35,424	34,112	31,488	17,712	8,528	8,528	0	0	0	0	0	0	168,592
2 BPA To CCPD PwrS	7,344	6,528	7,072	6,800	6,528	7,344	3,536	3,536	6,800	7,072	7,072	3,264	3,808	6,800	83,504
3 BPA To Other Entities	0	0	0	0	0	0	0	0	92,000	0	0	36,096	42,112	0	170,208
4 BPA To PPL PwrS	46,742	61,747	89,565	75,520	55,680	50,501	18,637	18,637	40	7,571	14,061	2,477	2,890	16,840	460,907
5 BPA To PPL CapS	98,345	107,732	99,806	107,575	88,709	92,535	43,568	43,568	96,866	94,043	83,544	49,342	53,137	96,424	1,155,193
6 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	14,444	13,978	0	0	0	28,422
7 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA To PSE WP3Set	0	32,800	35,424	34,112	31,488	17,712	8,528	8,528	0	0	0	0	0	0	168,592
9 Other Entities To BPA	7,080	6,576	7,538	6,834	6,487	3,801	1,559	1,559	4,260	5,375	4,734	2,351	2,742	3,768	64,665
10 PPL To BPA S/Pwr/X	9,886	8,787	0	0	0	0	0	0	0	0	0	0	0	9,153	27,826
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PKRepl	8,122	27,537	21,018	13,841	22,112	25,333	5,643	5,621	10,345	12,088	26,146	14,806	16,136	15,653	224,402
13 Total Contracts	177,520	284,508	295,848	278,794	242,491	214,938	89,999	89,976	210,311	140,593	149,534	108,336	120,826	148,639	2,552,311
Total Contracts Out															
14 Federal System	152,432	241,607	267,291	258,119	213,893	185,804	82,797	82,797	195,706	123,130	118,655	91,179	101,947	120,064	2,235,418
15 Public Entities	4,056	3,888	4,626	4,034	3,799	3,801	1,559	1,559	4,260	5,375	4,734	2,351	2,742	3,768	50,553
16 Investor-Owned Entities	21,032	39,012	23,930	16,641	24,800	25,333	5,643	5,621	10,345	12,088	26,146	14,806	16,136	24,806	266,340
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Contracts Out	177,520	284,508	295,848	278,794	242,491	214,938	89,999	89,976	210,311	140,593	149,534	108,336	120,826	148,639	2,552,311
Total Contracts In															
19 Federal System	25,088	42,901	28,557	20,675	28,599	29,134	7,202	7,180	14,605	17,463	30,880	17,157	18,879	28,574	316,893
20 Public Entities	7,344	6,528	7,072	6,800	6,528	7,344	3,536	3,536	98,800	7,072	7,072	39,360	45,920	6,800	253,712
21 Investor-Owned Entities	145,088	235,079	260,219	251,319	207,365	178,460	79,261	79,261	96,906	116,058	111,583	51,819	56,027	113,264	1,981,706
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Total Contracts In	177,520	284,508	295,848	278,794	242,491	214,938	89,999	89,976	210,311	140,593	149,534	108,336	120,826	148,639	2,552,311

Table A-16: Federal Intra-Regional Transfers
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum	
Intra-Regional Transfers																
1 BPA To AVWP WP3Set	0	34,112	35,424	34,112	31,488	17,712	8,528	8,528	0	0	0	0	0	0	0	169,904
2 BPA To CCPD PwrS	7,072	6,800	7,072	6,800	6,528	7,344	3,536	3,536	6,800	7,072	6,800	3,536	3,808	6,800	6,800	83,504
3 BPA To Other Entities	0	0	0	0	0	0	0	0	92,000	0	0	3,952	4,256	0	0	100,208
4 BPA To PPL Caps	98,345	107,732	99,806	107,575	88,709	92,535	43,568	43,568	96,866	94,043	83,544	49,342	53,137	0	0	1,058,769
5 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	14,444	13,441	0	0	0	0	27,885
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	45,011	64,320	89,565	75,520	55,680	50,501	18,637	18,637	40	7,571	13,520	2,683	2,890	16,840	16,840	461,414
8 BPA To PSE WP3Set	0	34,112	35,424	34,112	31,488	17,712	8,528	8,528	0	0	0	0	0	0	0	169,904
9 Other Entities To BPA	2,970	3,078	3,514	3,066	2,889	2,891	1,186	1,186	2,974	3,597	3,368	1,925	2,073	2,850	2,850	37,566
10 PPL To BPA S/Pwr/X	9,519	9,153	0	0	0	0	0	0	0	0	0	0	0	9,153	27,825	0
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PKRepl	8,122	27,537	21,018	13,841	22,112	25,333	5,643	5,621	10,345	12,088	26,146	14,806	16,136	0	0	208,749
13 Total Contracts	171,039	286,845	291,823	275,026	238,894	214,028	89,626	89,603	209,025	138,815	146,818	76,244	82,300	35,643	2,345,728	
Total Contracts Out																
14 Federal System	150,428	247,076	267,291	258,119	213,893	185,804	82,797	82,797	195,706	123,130	117,305	59,513	64,091	23,640	2,071,588	
15 Public Entities	2,970	3,078	3,514	3,066	2,889	2,891	1,186	1,186	2,974	3,597	3,368	1,925	2,073	2,850	37,566	
16 Investor-Owned Entities	17,641	36,690	21,018	13,841	22,112	25,333	5,643	5,621	10,345	12,088	26,146	14,806	16,136	9,153	236,574	
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Contracts Out	171,039	286,845	291,823	275,026	238,894	214,028	89,626	89,603	209,025	138,815	146,818	76,244	82,300	35,643	2,345,728	
Total Contracts In																
19 Federal System	20,610	39,769	24,532	16,907	25,001	28,224	6,829	6,807	13,319	15,685	29,514	16,731	18,209	12,003	274,140	
20 Public Entities	7,072	6,800	7,072	6,800	6,528	7,344	3,536	3,536	98,800	7,072	6,800	7,488	8,064	6,800	183,712	
21 Investor-Owned Entities	143,356	240,276	260,219	251,319	207,365	178,460	79,261	79,261	96,906	116,058	110,505	52,025	56,027	16,840	1,887,876	
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Total Contracts In	171,039	286,845	291,823	275,026	238,894	214,028	89,626	89,603	209,025	138,815	146,818	76,244	82,300	35,643	2,345,728	

Table A-22: BPA Power Sale Contracts
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 1937 Water Year
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	49,883	54,690	61,570	63,322	55,862	57,397	25,569	25,569	49,217	47,208	50,512	25,821	30,124	47,347	644,091
2 Total Federal Entities	49,883	54,690	61,570	63,322	55,862	57,397	25,569	25,569	49,217	47,208	50,512	25,821	30,124	47,347	644,091
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	41,680	5,494	13,018	28,122	30,344	21,782	47,231	47,231	118,635	123,727	134,485	51,713	60,332	91,449	815,244
4 Total U.S. Bureau of Reclamation	41,680	5,494	13,018	28,122	30,344	21,782	47,231	47,231	118,635	123,727	134,485	51,713	60,332	91,449	815,244
Direct Service Industry															
5 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Generating Public Entities															
7 Generating Public Entities	970,093	1,069,897	1,243,800	1,207,899	1,149,074	1,166,659	484,242	484,242	898,874	815,135	886,670	422,233	492,605	930,977	12,222,398
8 Total Generating Public Entities	970,093	1,069,897	1,243,800	1,207,899	1,149,074	1,166,659	484,242	484,242	898,874	815,135	886,670	422,233	492,605	930,977	12,222,398
Generating Public Entities (Slice)															
9 Generating Public Entities (Slice)	423,481	525,787	483,084	487,686	388,922	363,226	147,496	166,208	536,483	431,074	455,261	252,404	217,944	397,349	5,276,405
10 Total Generating Public Entities (Slice)	423,481	525,787	483,084	487,686	388,922	363,226	147,496	166,208	536,483	431,074	455,261	252,404	217,944	397,349	5,276,405
Non-Generating Public Entities															
11 Non-Generating Public Entities	1,339,782	1,425,568	1,655,578	1,669,748	1,485,889	1,460,830	674,473	674,473	1,334,822	1,424,149	1,469,181	692,271	807,649	1,287,719	17,402,132
12 Total Non-Generating Public Entities	1,339,782	1,425,568	1,655,578	1,669,748	1,485,889	1,460,830	674,473	674,473	1,334,822	1,424,149	1,469,181	692,271	807,649	1,287,719	17,402,132
Non-Generating Public Entities (Slice)															
13 Non-Generating Public Entities (Slice)	254,279	315,709	290,068	292,831	233,528	218,099	88,564	99,800	322,131	258,838	273,361	151,556	130,864	238,588	3,168,217
14 Total Non-Generating Public Entities (Slice)	254,279	315,709	290,068	292,831	233,528	218,099	88,564	99,800	322,131	258,838	273,361	151,556	130,864	238,588	3,168,217
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	49,883	54,690	61,570	63,322	55,862	57,397	25,569	25,569	49,217	47,208	50,512	25,821	30,124	47,347	644,091
20 U.S. Bureau of Reclamation	41,680	5,494	13,018	28,122	30,344	21,782	47,231	47,231	118,635	123,727	134,485	51,713	60,332	91,449	815,244
21 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Generating Public Entities	1,393,573	1,595,684	1,726,883	1,695,585	1,537,995	1,529,885	631,737	650,450	1,435,357	1,246,209	1,341,931	674,637	710,549	1,328,326	17,498,803
23 Non-Generating Public Entities	1,594,061	1,741,276	1,945,646	1,962,579	1,719,417	1,678,929	763,037	774,273	1,656,954	1,682,988	1,742,542	843,827	938,513	1,526,307	20,570,349
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Total Power Sales Contracts	3,079,197	3,397,144	3,747,117	3,749,608	3,343,619	3,287,994	1,467,575	1,497,524	3,260,162	3,100,133	3,269,469	1,595,998	1,739,519	2,993,429	39,528,487

Table A-22: BPA Power Sale Contracts
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 1937 Water Year
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	50,718	55,737	62,734	63,746	56,284	57,795	25,738	25,738	49,545	47,512	52,788	27,113	29,198	47,635	652,280
2 Total Federal Entities	50,718	55,737	62,734	63,746	56,284	57,795	25,738	25,738	49,545	47,512	52,788	27,113	29,198	47,635	652,280
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	40,173	5,721	13,018	28,122	30,344	21,782	47,231	47,231	118,635	123,727	129,515	55,919	60,220	91,449	813,088
4 Total U.S. Bureau of Reclamation	40,173	5,721	13,018	28,122	30,344	21,782	47,231	47,231	118,635	123,727	129,515	55,919	60,220	91,449	813,088
Direct Service Industry															
5 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Generating Public Entities															
7 Generating Public Entities	942,738	1,110,737	1,249,832	1,216,194	1,156,943	1,173,053	487,218	487,218	903,921	819,993	860,314	457,129	492,293	936,536	12,294,119
8 Total Generating Public Entities	942,738	1,110,737	1,249,832	1,216,194	1,156,943	1,173,053	487,218	487,218	903,921	819,993	860,314	457,129	492,293	936,536	12,294,119
Generating Public Entities (Slice)															
9 Generating Public Entities (Slice)	425,898	532,469	487,613	492,216	393,013	367,750	135,678	138,672	483,802	376,002	450,239	254,617	218,339	398,171	5,154,479
10 Total Generating Public Entities (Slice)	425,898	532,469	487,613	492,216	393,013	367,750	135,678	138,672	483,802	376,002	450,239	254,617	218,339	398,171	5,154,479
Non-Generating Public Entities															
11 Non-Generating Public Entities	1,351,878	1,473,311	1,687,489	1,701,058	1,517,273	1,488,803	687,446	687,446	1,360,638	1,451,831	1,514,248	743,384	800,568	1,310,355	17,775,728
12 Total Non-Generating Public Entities	1,351,878	1,473,311	1,687,489	1,701,058	1,517,273	1,488,803	687,446	687,446	1,360,638	1,451,831	1,514,248	743,384	800,568	1,310,355	17,775,728
Non-Generating Public Entities (Slice)															
13 Non-Generating Public Entities (Slice)	255,730	319,721	292,787	295,551	235,984	220,815	81,468	83,266	290,499	225,770	270,346	152,885	131,102	239,082	3,095,006
14 Total Non-Generating Public Entities (Slice)	255,730	319,721	292,787	295,551	235,984	220,815	81,468	83,266	290,499	225,770	270,346	152,885	131,102	239,082	3,095,006
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	50,718	55,737	62,734	63,746	56,284	57,795	25,738	25,738	49,545	47,512	52,788	27,113	29,198	47,635	652,280
20 U.S. Bureau of Reclamation	40,173	5,721	13,018	28,122	30,344	21,782	47,231	47,231	118,635	123,727	129,515	55,919	60,220	91,449	813,088
21 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Generating Public Entities	1,368,636	1,643,206	1,737,445	1,708,409	1,549,956	1,540,803	622,896	625,891	1,387,723	1,195,995	1,310,553	711,746	710,632	1,334,707	17,448,598
23 Non-Generating Public Entities	1,607,608	1,793,033	1,980,276	1,996,609	1,753,258	1,709,618	768,914	770,712	1,651,137	1,677,601	1,784,594	896,269	931,669	1,549,437	20,870,734
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Total Power Sales Contracts	3,067,134	3,497,697	3,793,474	3,796,887	3,389,842	3,329,998	1,464,779	1,469,571	3,207,040	3,044,836	3,277,448	1,691,046	1,731,719	3,023,227	39,784,700

Table A-24: Federal NUG Resources By Project And Project Type

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
NUG: Hydro															
1 Dworshak/Cleanwater Small Hydropow	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 Elwha Hydro	1,586	4,027	4,584	5,057	3,507	3,703	3,531	3,531	3,848	3,526	2,202	1,731	1,731	895	43,458
3 Gilnes Canyon Hydro	2,864	6,028	6,726	6,314	5,379	5,638	5,285	5,285	12,801	6,452	4,317	3,367	3,367	1,533	75,355
4 Total NUG: Hydro	5,586	11,065	12,405	12,423	9,896	10,477	9,363	9,363	17,701	11,072	7,614	5,602	5,686	3,480	131,732
NUG: Renewables															
5 Ashland Solar Project	1	1	0	1	1	1	1	1	2	2	2	1	1	2	15
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total NUG: Renewables	1	1	0	1	1	1	1	1	2	2	2	1	1	2	15
Total Non-Utility Generating Resources															
8 Federal Entities	5,587	11,066	12,405	12,424	9,897	10,479	9,364	9,364	17,702	11,074	7,616	5,603	5,687	3,482	131,747

Table A-24: Federal NUG Resources By Project And Project Type

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Heavy Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
NUG: Hydro															
1 Dworshak/Cleanwater Small Hydropow	1,094	1,052	1,094	1,052	1,010	1,136	547	547	1,052	1,094	1,052	547	589	1,052	12,919
2 Elwha Hydro	1,586	4,027	4,584	5,057	3,507	3,703	3,531	3,531	3,848	3,526	2,202	1,731	1,731	895	43,458
3 Gilnes Canyon Hydro	2,864	6,028	6,726	6,314	5,379	5,638	5,285	5,285	12,801	6,452	4,317	3,367	3,367	1,533	75,355
4 Total NUG: Hydro	5,544	11,107	12,405	12,423	9,896	10,477	9,363	9,363	17,701	11,072	7,572	5,644	5,686	3,480	131,732
NUG: Renewables															
5 Ashland Solar Project	1	1	0	1	1	1	1	1	2	2	2	1	1	2	15
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total NUG: Renewables	1	1	0	1	1	1	1	1	2	2	2	1	1	2	15
Total Non-Utility Generating Resources															
8 Federal Entities	5,545	11,108	12,405	12,424	9,897	10,479	9,364	9,364	17,702	11,074	7,573	5,645	5,687	3,482	131,747

LLH MWhs ANALYSIS

2.6 FEDERAL LOADS AND RESOURCES STUDY-LLH MWhs ANALYSIS
Monthly LLH MWhs Energy
For FY 2010 and 2011

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Table A-2: Federal Exports
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Exports East of Continental Divide															
1 BPA to Other Entities	12,326	13,767	16,828	16,553	13,270	13,867	6,020	6,020	11,702	11,209	13,803	6,157	5,948	11,327	158,798
2 Total Exports to ECD	12,326	13,767	16,828	16,553	13,270	13,867	6,020	6,020	11,702	11,209	13,803	6,157	5,948	11,327	158,798
Exports to Pacific Southwest															
3 BPA to PASA C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA to PASA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA to RVSD CapS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA to RVSD C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA to RVSD C/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 BPA to RVSD SPwr/X	0	0	0	0	0	0	0	0	7,344	7,056	0	0	0	0	14,400
9 BPA NW-SW Inter tie Losses	0	0	0	0	0	0	0	0	220	212	0	0	0	0	432
10 Total Exports To PSW	0	0	0	0	0	0	0	0	7,564	7,268	0	0	0	0	14,832
Exports to Inland Southwest															
11 BPA to SPP PwrS	14,040	15,165	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	24,600	12,600	12,000	24,000	231,000
12 Total Exports To ISW	14,040	15,165	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	24,600	12,600	12,000	24,000	231,000
Exports to Canada															
13 BPA to BCHP CanEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Total Exports To Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exports to Other Entities															
15 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports	26,366	28,932	31,588	32,033	26,230	27,862	17,420	17,420	45,067	41,277	38,403	18,757	17,948	35,327	404,630
16 Federal Entities															

Table A-2: Federal Exports
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in Mwhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Exports East of Continental Divide															
1 BPA to Other Entities	12,472	13,920	16,982	16,703	13,416	14,009	6,094	6,094	11,849	11,351	13,369	5,961	6,285	11,479	159,983
2 Total Exports to ECD	12,472	13,920	16,982	16,703	13,416	14,009	6,094	6,094	11,849	11,351	13,369	5,961	6,285	11,479	159,983
Exports to Pacific Southwest															
3 BPA to PASA C/NX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA to PASA S/NX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA to RVSD C/NX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	7,056	7,056	0	0	0	0	14,112
7 BPA NW-SW Inertie Losses	0	0	0	0	0	0	0	0	212	212	0	0	0	0	423
8 Total Exports To PSW	0	0	0	0	0	0	0	0	7,268	7,268	0	0	0	0	14,535
Exports to Inland Southwest															
9 BPA to SPP PwrS	14,760	14,445	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	25,800	11,400	12,000	24,000	231,000
10 Total Exports To ISW	14,760	14,445	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	25,800	11,400	12,000	24,000	231,000
Exports to Canada															
11 BPA to BCHP CanEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Total Exports To Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exports to Other Entities															
13 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Exports	27,232	28,365	31,742	32,183	26,376	28,004	17,494	17,494	44,916	41,419	39,169	17,361	18,285	35,479	405,519
14 Federal Entities															

Table A-5: Federal Imports
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Imports From East of Continental Divide															
1 PPL to BPA PwrS	33,758	51,617	67,174	61,926	41,760	36,356	13,619	13,619	33	5,533	10,546	2,167	2,064	12,798	352,970
2 Total Imports From ECD	33,758	51,617	67,174	61,926	41,760	36,356	13,619	13,619	33	5,533	10,546	2,167	2,064	12,798	352,970
Imports From Pacific Southwest															
3 PASA to BPA XchgNrg	2,593	2,506	2,589	2,589	2,339	1,295	0	0	0	0	0	0	0	2,506	16,415
4 PASA to BPA S/NX	514	497	513	513	464	238	0	0	0	0	0	0	0	497	3,236
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	3,318	1,606	1,713	3,211	9,848
6 RVSD to BPA XchgNrg	3,094	4,583	4,469	4,698	4,125	4,469	2,163	0	0	0	0	0	0	0	27,601
7 RVSD to BPA PkRepl	0	3,360	3,680	3,360	3,200	3,680	1,754	1,766	4,830	0	0	0	0	0	25,630
8 RVSD to BPA PkRepl	5,060	0	0	0	0	0	0	0	0	0	0	0	0	0	5,060
9 RVSD to BPA XchgNrg	0	12,292	11,999	12,585	10,536	11,414	5,524	0	0	0	0	0	0	0	64,350
10 RVSD to BPA S/Pwr/X	0	7,186	7,015	7,357	6,159	6,673	3,229	0	0	0	0	0	0	0	37,619
11 RVSD to BPA PkRepl	7,920	1,890	2,070	1,890	1,800	2,070	987	993	0	0	7,920	4,057	3,863	7,920	43,380
12 Total Imports From PSW	19,181	32,313	32,335	32,992	28,622	29,839	13,657	2,759	4,830	0	11,238	5,663	5,576	14,134	233,139
Imports From Inland Southwest															
13 SPP to BPA PwrS	14,040	15,165	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	24,600	12,600	12,000	24,000	231,000
14 Total Imports From ISW	14,040	15,165	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	24,600	12,600	12,000	24,000	231,000
Imports From Canada															
15 BCHP to BPA PwrS	312	321	312	328	288	311	152	152	328	304	312	168	160	304	3,752
16 Total Imports From Canada	312	321	312	328	288	311	152	152	328	304	312	168	160	304	3,752
Imports From Other Entities															
17 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Imports	67,291	99,416	114,581	110,727	83,630	80,501	38,828	27,930	30,991	28,637	46,696	20,598	19,800	51,236	820,861

Table A-5: Federal Imports
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Imports From East of Continental Divide															
1 PPL to BPA PwrS	35,490	49,044	67,174	61,926	41,760	36,356	13,619	13,619	33	5,533	11,086	1,961	2,064	12,798	352,463
2 Total Imports From ECD	35,490	49,044	67,174	61,926	41,760	36,356	13,619	13,619	33	5,533	11,086	1,961	2,064	12,798	352,463
Imports From Pacific Southwest															
3 PASA to BPA XchgNrg	2,593	2,506	2,589	2,589	2,339	1,295	0	0	0	0	0	0	0	2,506	16,415
4 PASA to BPA S/NX	514	497	513	513	464	238	0	0	0	0	0	0	0	497	3,236
5 PASA to BPA PkRepl	0	0	0	0	0	0	0	0	0	0	3,318	1,606	1,713	3,211	9,848
6 RVSD to BPA XchgNrg	0	11,541	11,845	12,452	10,934	11,845	5,733	0	0	0	0	0	0	0	64,350
7 RVSD to BPA S/Pwr/X	0	7,186	7,015	7,357	6,159	6,673	3,229	0	0	0	0	0	0	0	37,619
8 RVSD to BPA PkRepl	7,560	1,980	2,070	1,890	1,800	2,070	942	948	0	0	7,560	4,034	4,246	7,560	42,660
9 Total Imports From PSW	10,667	23,709	24,032	24,801	21,695	22,121	9,904	948	0	0	10,878	5,640	5,959	13,774	174,128
Imports From Inland Southwest															
10 SPP to BPA PwrS	14,760	14,445	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	25,800	11,400	12,000	24,000	231,000
11 Total Imports From ISW	14,760	14,445	14,760	15,480	12,960	13,995	11,400	11,400	25,800	22,800	25,800	11,400	12,000	24,000	231,000
Imports From Canada															
12 BChP to BPA PwrS	328	305	312	328	288	311	152	152	328	304	328	152	160	304	3,752
13 Total Imports From Canada	328	305	312	328	288	311	152	152	328	304	328	152	160	304	3,752
Imports From Other Entities															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Imports	61,244	87,503	106,278	102,536	76,703	72,783	35,075	26,119	26,161	28,637	48,093	19,152	20,183	50,876	761,343
15 Federal System															

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Table A-8: Federal Renewable Resources
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal System															
1 Condon Wind Project	3,348	4,028	3,915	2,822	2,716	4,767	1,432	1,438	2,745	2,713	2,482	1,085	1,033	2,535	37,058
2 Foote Creek 1	1,826	1,902	2,461	2,632	2,374	2,214	958	965	1,282	1,259	632	492	468	1,196	20,662
3 Foote Creek 2	126	216	284	397	377	258	143	144	248	145	107	48	45	96	2,634
4 Foote Creek 4	1,278	2,321	2,354	2,704	2,698	1,933	1,007	1,013	1,322	1,417	947	387	368	961	20,710
5 Georgia-Pacific Paper (Wauna)	6,954	8,307	8,561	9,439	7,655	8,052	3,849	3,849	7,609	3,730	6,694	3,380	3,219	6,643	87,942
6 Klondike I	2,034	1,297	1,230	1,008	1,574	2,473	1,246	1,254	3,184	3,823	3,881	1,663	1,583	2,563	28,813
7 Klondike III	3,701	2,708	2,400	1,964	3,211	5,273	2,499	2,772	6,302	7,071	7,482	3,020	3,179	5,427	57,008
8 StateLine Wind Project	7,415	6,743	6,651	4,994	4,638	11,590	4,396	4,426	9,215	9,893	9,820	4,655	4,433	7,218	96,085
9 Total Federal System	26,681	27,522	27,855	25,960	25,244	36,560	15,530	15,860	31,907	30,051	32,045	14,730	14,329	26,639	350,912
Renewable Resources															
10 Federal System	26,681	27,522	27,855	25,960	25,244	36,560	15,530	15,860	31,907	30,051	32,045	14,730	14,329	26,639	350,912

Table A-8: Federal Renewable Resources
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal System															
1 Condon Wind Project	3,348	4,028	3,915	2,822	2,716	4,767	1,432	1,438	2,745	2,713	2,482	1,032	1,086	2,535	37,058
2 Foote Creek 1	1,826	1,902	2,461	2,632	2,374	2,214	958	965	1,282	1,259	632	468	492	1,196	20,662
3 Foote Creek 2	126	216	284	397	377	258	143	144	248	145	107	45	48	96	2,634
4 Foote Creek 4	1,278	2,321	2,354	2,704	2,698	1,933	1,007	1,013	1,322	1,417	947	368	387	961	20,710
5 Georgia-Pacific Paper (Wauna)	7,311	7,913	8,561	9,439	7,655	8,052	3,849	3,849	7,609	3,730	7,021	3,058	3,219	6,643	87,909
6 Klondike I	2,034	1,297	1,230	1,008	1,574	2,473	1,246	1,254	3,184	3,823	3,881	1,581	1,665	2,563	28,813
7 Klondike III	3,701	2,708	2,400	1,964	3,211	5,273	2,499	2,772	6,302	7,071	7,482	3,020	3,179	5,427	57,008
8 StateLine Wind Project	7,415	6,743	6,651	4,994	4,638	11,590	4,396	4,426	9,215	9,893	9,820	4,428	4,661	7,218	96,085
9 Total Federal System	27,038	27,127	27,855	25,960	25,244	36,560	15,530	15,860	31,907	30,051	32,371	14,000	14,737	26,639	350,879
Renewable Resources															
10 Federal System	27,038	27,127	27,855	25,960	25,244	36,560	15,530	15,860	31,907	30,051	32,371	14,000	14,737	26,639	350,879

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Table A-10: Federal Large Thermal
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	321,360	347,110	337,840	354,320	296,640	320,330	156,560	156,560	354,320	313,120	337,840	173,040	164,800	329,600	3,963,440
2 Columbia Generating Station: Regiona	321,360	347,110	337,840	354,320	296,640	320,330	156,560	156,560	354,320	313,120	337,840	173,040	164,800	329,600	3,963,440
Total Large Thermal															
3 Federal System	321,360	347,110	337,840	354,320	296,640	320,330	156,560	156,560	354,320	313,120	337,840	173,040	164,800	329,600	3,963,440

Table A-10: Federal Large Thermal
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	337,840	330,630	337,840	354,320	296,640	320,330	83,600	0	0	0	308,568	156,560	164,800	329,600	3,020,728
2 Columbia Generating Station: Regiona	337,840	330,630	337,840	354,320	296,640	320,330	83,600	0	0	0	308,568	156,560	164,800	329,600	3,020,728
Total Large Thermal															
3 Federal System	337,840	330,630	337,840	354,320	296,640	320,330	83,600	0	0	0	308,568	156,560	164,800	329,600	3,020,728

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
BPA Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Priest Rapids CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 AWPP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 UnknMKT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Priest Rapids: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Wanapum CER for Canada															
27 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 UnknMKT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 Wanapum: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Rock Island P.H., #1 CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54 Rock Island P.H., #1: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rock Island P.H., #2 CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Rock Island P.H., #2: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rocky Reach CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60 CLKM to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65 Rocky Reach: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wells CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67 COLV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69 OKPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73 Wells: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79 Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
BPA Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Priest Rapids CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 AWPP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 UnknMKT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Priest Rapids: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Wanapum CER for Canada															
27 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 COPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29 CWPC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 EWEB to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 FGRV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32 FREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 ICLP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 KITT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 KOOT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 LREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38 LVE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39 MCMN to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 MTRF to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 NLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 RREC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46 SCL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47 SLEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48 TPU to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49 UNEC to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 UnknMKT to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51 Wanapum: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-15: Canadian Entitlement Return For Canada

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

Continued

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Rock Island P.H., #1 CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54 Rock Island P.H. #1: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rock Island P.H., #2 CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57 Rock Island P.H. #2: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rocky Reach CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60 CLKM to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65 Rocky Reach: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wells CER for Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66 AVWP to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67 COLV to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69 OKPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 PGE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71 PPL to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72 PSE to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73 Wells: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79 Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-16: Federal Intra-Regional Transfers
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum	
Intra-Regional Transfers																
1 BPA To AVWP WP3Set	0	40,093	39,794	41,106	36,451	19,364	9,328	9,364	0	0	0	0	0	0	0	195,500
2 BPA To CCPD PwrS	5,304	5,729	5,576	5,848	4,896	5,287	2,584	2,584	5,848	5,168	5,576	2,856	2,720	5,440	0	65,416
3 BPA To Other Entities	0	0	0	0	0	0	0	0	79,120	0	0	31,584	30,080	0	0	140,784
4 BPA To PPL Caps	37,759	56,976	39,677	49,775	45,234	39,422	18,521	18,643	27,231	31,283	34,621	16,819	17,704	43,279	0	476,943
5 BPA To PPL S/PwrX	0	0	0	0	0	0	0	0	0	10,556	11,022	0	0	0	0	21,578
6 BPA To PPL S/NX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	33,867	54,029	70,618	64,947	41,760	36,473	13,530	13,619	34	5,533	11,086	2,167	2,064	13,472	0	363,199
8 BPA To PSE WP3Set	0	40,093	39,794	41,106	36,451	19,364	9,328	9,364	0	0	0	0	0	0	0	195,500
9 Other Entities To BPA	5,113	5,771	5,944	5,877	4,865	2,737	1,139	1,139	3,664	3,928	3,733	2,057	1,959	3,015	0	50,940
10 PPL To BPA S/PwrX	7,162	7,689	0	0	0	0	0	0	0	0	0	0	0	7,323	0	22,174
11 PPL To BPA S/NX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PKRepl	127,982	137,171	118,465	143,510	111,830	106,624	56,445	56,590	113,752	113,237	92,019	51,355	54,705	124,050	0	1,407,735
13 Total Contracts	217,187	347,551	319,868	352,169	281,487	229,271	110,875	111,304	229,648	169,705	158,057	106,838	109,232	196,579	0	2,939,770
Total Contracts Out																
14 Federal System	76,929	196,920	195,459	202,782	164,792	119,910	53,290	53,575	112,233	52,539	62,306	53,426	52,568	62,191	0	1,458,921
15 Public Entities	2,929	3,412	3,648	3,469	2,849	2,737	1,139	1,139	3,664	3,928	3,733	2,057	1,959	3,015	0	39,677
16 Investor-Owned Entities	137,328	147,219	120,761	145,918	113,846	106,624	56,445	56,590	113,752	113,237	92,019	51,355	54,705	131,373	0	1,441,172
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Contracts Out	217,187	347,551	319,868	352,169	281,487	229,271	110,875	111,304	229,648	169,705	158,057	106,838	109,232	196,579	0	2,939,770
Total Contracts In																
19 Federal System	140,258	150,631	124,408	149,387	116,695	109,361	57,584	57,730	117,415	117,165	95,752	53,411	56,664	134,388	0	1,480,849
20 Public Entities	5,304	5,729	5,576	5,848	4,896	5,287	2,584	2,584	84,968	5,168	5,576	34,440	32,800	5,440	0	206,200
21 Investor-Owned Entities	71,625	191,191	189,883	196,934	159,896	114,623	50,706	50,991	27,265	47,371	56,730	18,986	19,768	56,751	0	1,252,721
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Total Contracts In	217,187	347,551	319,868	352,169	281,487	229,271	110,875	111,304	229,648	169,705	158,057	106,838	109,232	196,579	0	2,939,770

Table A-16: Federal Intra-Regional Transfers
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 [55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Intra-Regional Transfers															
1 BPA To AVWP WP3Set	0	38,781	39,794	41,106	36,451	19,364	9,328	9,364	0	0	0	0	0	0	194,188
2 BPA To CCPD PwrS	5,576	5,457	5,576	5,848	4,896	5,287	2,584	2,584	5,848	5,168	5,848	2,584	2,720	5,440	65,416
3 BPA To Other Entities	0	0	0	0	0	0	0	0	79,120	0	0	2,888	3,040	0	85,048
4 BPA To PPL Caps	37,759	56,976	39,677	49,775	45,234	39,422	18,521	18,643	27,231	31,283	34,621	16,819	17,704	0	433,665
5 BPA To PPL S/Pwrx	0	0	0	0	0	0	0	0	0	10,556	11,559	0	0	0	22,115
6 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 BPA To PPL PwrS	35,598	51,456	70,618	64,947	41,760	36,473	13,530	13,619	34	5,533	11,627	1,961	2,064	13,472	362,692
8 BPA To PSE WP3Set	0	38,781	39,794	41,106	36,451	19,364	9,328	9,364	0	0	0	0	0	0	194,188
9 Other Entities To BPA	2,341	2,470	2,770	2,637	2,167	2,081	867	867	2,558	2,629	2,896	1,407	1,481	2,280	29,450
10 PPL To BPA S/Pwrx	7,529	7,323	0	0	0	0	0	0	0	0	0	0	0	7,323	22,175
11 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PPL To BPA PKRepl	127,982	137,171	118,465	143,510	111,830	106,624	56,445	56,590	113,752	113,237	92,019	51,355	54,705	0	1,283,685
13 Total Contracts	216,785	338,415	316,694	348,928	278,789	228,616	110,602	111,032	228,542	168,405	158,571	77,013	81,714	28,515	2,692,622
Total Contracts Out															
14 Federal System	78,933	191,451	195,459	202,782	164,792	119,910	53,290	53,575	112,233	52,539	63,655	24,252	25,528	18,912	1,357,312
15 Public Entities	2,341	2,470	2,770	2,637	2,167	2,081	867	867	2,558	2,629	2,896	1,407	1,481	2,280	29,450
16 Investor-Owned Entities	135,511	144,494	118,465	143,510	111,830	106,624	56,445	56,590	113,752	113,237	92,019	51,355	54,705	7,323	1,305,860
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Contracts Out	216,785	338,415	316,694	348,928	278,789	228,616	110,602	111,032	228,542	168,405	158,571	77,013	81,714	28,515	2,692,622
Total Contracts In															
19 Federal System	137,853	146,964	121,235	146,146	113,997	108,706	57,312	57,457	116,309	115,866	94,915	52,761	56,186	9,603	1,335,310
20 Public Entities	5,576	5,457	5,576	5,848	4,896	5,287	2,584	2,584	84,968	5,168	5,848	5,472	5,760	5,440	150,464
21 Investor-Owned Entities	73,357	185,994	189,883	196,934	159,896	114,623	50,706	50,991	27,265	47,371	57,807	18,780	19,768	13,472	1,206,848
22 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Total Contracts In	216,785	338,415	316,694	348,928	278,789	228,616	110,602	111,032	228,542	168,405	158,571	77,013	81,714	28,515	2,692,622

Table A-22: BPA Power Sale Contracts
 PNW Loads and Resource Study
 2009 - 2010 Fiscal Years
 1937 Water Year
 [55] 2010 Initial Rate Case (Final)

1/17/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	33,162	38,654	44,987	45,427	37,744	37,329	17,191	17,191	34,050	28,406	37,888	17,254	16,433	32,905	438,620
2 Total Federal Entities	33,162	38,654	44,987	45,427	37,744	37,329	17,191	17,191	34,050	28,406	37,888	17,254	16,433	32,905	438,620
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	30,035	4,820	10,268	24,184	22,758	15,656	34,439	34,439	101,600	90,150	105,833	45,007	42,864	73,022	635,073
4 Total U.S. Bureau of Reclamation	30,035	4,820	10,268	24,184	22,758	15,656	34,439	34,439	101,600	90,150	105,833	45,007	42,864	73,022	635,073
Direct Service Industry															
5 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Generating Public Entities															
7 Generating Public Entities	598,352	781,715	839,610	871,240	737,666	731,783	302,394	302,394	648,820	508,301	574,874	303,113	288,679	627,863	8,116,804
8 Total Generating Public Entities	598,352	781,715	839,610	871,240	737,666	731,783	302,394	302,394	648,820	508,301	574,874	303,113	288,679	627,863	8,116,804
Generating Public Entities (Slice)															
9 Generating Public Entities (Slice)	278,536	320,811	308,979	308,213	252,193	252,977	107,504	128,479	349,423	308,909	296,734	142,868	139,452	265,997	3,461,073
10 Total Generating Public Entities (Slice)	278,536	320,811	308,979	308,213	252,193	252,977	107,504	128,479	349,423	308,909	296,734	142,868	139,452	265,997	3,461,073
Non-Generating Public Entities															
11 Non-Generating Public Entities	851,121	1,023,885	1,155,540	1,196,073	983,544	932,442	440,903	440,903	957,356	896,110	1,067,017	489,285	465,986	884,927	11,785,092
12 Total Non-Generating Public Entities	851,121	1,023,885	1,155,540	1,196,073	983,544	932,442	440,903	440,903	957,356	896,110	1,067,017	489,285	465,986	884,927	11,785,092
Non-Generating Public Entities (Slice)															
13 Non-Generating Public Entities (Slice)	167,257	192,642	185,537	185,078	151,438	151,909	64,555	77,150	209,823	185,495	178,184	85,790	83,739	159,727	2,078,323
14 Total Non-Generating Public Entities (Slice)	167,257	192,642	185,537	185,078	151,438	151,909	64,555	77,150	209,823	185,495	178,184	85,790	83,739	159,727	2,078,323
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	33,162	38,654	44,987	45,427	37,744	37,329	17,191	17,191	34,050	28,406	37,888	17,254	16,433	32,905	438,620
20 U.S. Bureau of Reclamation	30,035	4,820	10,268	24,184	22,758	15,656	34,439	34,439	101,600	90,150	105,833	45,007	42,864	73,022	635,073
21 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Generating Public Entities	876,888	1,102,526	1,148,589	1,179,453	989,859	984,760	409,898	430,872	998,243	817,210	871,608	445,981	428,131	893,860	11,577,878
23 Non-Generating Public Entities	1,018,378	1,216,527	1,341,077	1,381,150	1,134,982	1,084,350	505,458	518,052	1,167,180	1,081,606	1,245,201	575,075	549,725	1,044,654	13,863,415
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Total Power Sales Contracts	1,958,462	2,362,527	2,544,921	2,630,214	2,185,342	2,122,095	966,986	1,000,555	2,301,072	2,017,372	2,260,530	1,083,317	1,037,152	2,044,441	26,514,985

Table A-22: BPA Power Sale Contracts
 PNW Loads and Resource Study
 2010 - 2011 Fiscal Years
 1937 Water Year

1/17/2009

[55] 2010 Initial Rate Case (Final)

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	33,733	39,395	45,846	45,688	37,985	37,546	17,288	17,288	34,239	28,555	36,216	16,504	17,373	33,087	440,745
2 Total Federal Entities	33,733	39,395	45,846	45,688	37,985	37,546	17,288	17,288	34,239	28,555	36,216	16,504	17,373	33,087	440,745
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	31,542	4,592	10,268	24,184	22,758	15,656	34,439	34,439	101,600	90,150	110,804	40,814	42,963	73,022	637,229
4 Total U.S. Bureau of Reclamation	31,542	4,592	10,268	24,184	22,758	15,656	34,439	34,439	101,600	90,150	110,804	40,814	42,963	73,022	637,229
Direct Service Industry															
5 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Generating Public Entities															
7 Generating Public Entities	627,886	745,963	840,019	873,151	739,969	733,241	303,106	303,106	649,588	509,302	609,051	275,088	289,566	629,000	8,128,036
8 Total Generating Public Entities	627,886	745,963	840,019	873,151	739,969	733,241	303,106	303,106	649,588	509,302	609,051	275,088	289,566	629,000	8,128,036
Generating Public Entities (Slice)															
9 Generating Public Entities (Slice)	280,648	318,518	308,979	308,213	252,193	252,977	97,480	106,968	300,740	265,887	292,086	141,073	139,487	265,997	3,331,246
10 Total Generating Public Entities (Slice)	280,648	318,518	308,979	308,213	252,193	252,977	97,480	106,968	300,740	265,887	292,086	141,073	139,487	265,997	3,331,246
Non-Generating Public Entities															
11 Non-Generating Public Entities	885,826	1,026,593	1,177,901	1,218,689	1,004,785	950,454	449,468	449,468	975,799	913,412	1,076,678	462,878	487,240	900,110	11,979,301
12 Total Non-Generating Public Entities	885,826	1,026,593	1,177,901	1,218,689	1,004,785	950,454	449,468	449,468	975,799	913,412	1,076,678	462,878	487,240	900,110	11,979,301
Non-Generating Public Entities (Slice)															
13 Non-Generating Public Entities (Slice)	168,525	191,265	185,537	185,078	151,438	151,909	58,535	64,233	180,590	159,661	175,393	84,712	83,760	159,727	2,000,364
14 Total Non-Generating Public Entities (Slice)	168,525	191,265	185,537	185,078	151,438	151,909	58,535	64,233	180,590	159,661	175,393	84,712	83,760	159,727	2,000,364
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	33,733	39,395	45,846	45,688	37,985	37,546	17,288	17,288	34,239	28,555	36,216	16,504	17,373	33,087	440,745
20 U.S. Bureau of Reclamation	31,542	4,592	10,268	24,184	22,758	15,656	34,439	34,439	101,600	90,150	110,804	40,814	42,963	73,022	637,229
21 Direct Service Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Generating Public Entities	908,534	1,064,481	1,148,998	1,181,364	992,162	986,217	400,586	410,074	950,328	775,190	901,137	416,161	429,053	894,997	11,459,281
23 Non-Generating Public Entities	1,054,351	1,217,858	1,363,438	1,403,767	1,156,223	1,102,363	508,003	513,700	1,156,389	1,073,074	1,252,072	547,590	571,000	1,059,837	13,979,665
24 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Total Power Sales Contracts	2,028,160	2,326,326	2,568,551	2,655,003	2,209,127	2,141,782	960,316	975,502	2,242,556	1,966,968	2,300,228	1,021,070	1,060,388	2,060,943	26,516,920

Table A-24: Federal NUG Resources By Project And Project Type

PNW Loads and Resource Study

2009 - 2010 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
NUG: Hydro															
1 Dworshak/Cleanwater Small Hydropow	823	884	863	905	757	821	397	400	905	800	863	442	421	842	10,120
2 Elwha Hydro	1,125	2,826	3,697	3,709	2,593	2,808	2,508	2,508	2,815	2,566	1,790	1,222	1,222	744	32,131
3 Gilnes Canyon Hydro	2,109	4,246	5,288	4,767	3,983	4,415	3,766	3,766	9,288	4,755	3,529	2,404	2,404	1,411	56,132
4 Total NUG: Hydro	4,057	7,956	9,848	9,380	7,332	8,044	6,671	6,674	13,007	8,120	6,182	4,068	4,047	2,997	98,384
NUG: Renewables															
5 Ashland Solar Project	1	0	0	0	1	1	1	1	1	1	2	1	1	1	12
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Total NUG: Renewables	1	0	0	0	1	1	1	1	1	1	2	1	1	1	12
Total Non-Utility Generating Resources															
8 Federal Entities	4,058	7,956	9,848	9,381	7,333	8,045	6,672	6,674	13,009	8,122	6,184	4,068	4,047	2,998	98,396
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Total Non-Utility Generation	4,058	7,956	9,848	9,381	7,333	8,045	6,672	6,674	13,009	8,122	6,184	4,068	4,047	2,998	98,396

Table A-24: Federal NUG Resources By Project And Project Type

PNW Loads and Resource Study

2010 - 2011 Fiscal Years

[55] 2010 Initial Rate Case (Final)

1/7/2009

Light Load Hours in MWhr	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum	
NUG: Hydro																
1 Dworshak/Cleanwater Small Hydropow	865	842	863	905	757	821	397	400	905	800	905	400	421	842	10,120	
2 Elwha Hydro	1,125	2,826	3,697	3,709	2,593	2,808	2,508	2,508	2,815	2,566	1,790	1,222	1,222	744	32,131	
3 Gilnes Canyon Hydro	2,109	4,246	5,288	4,767	3,983	4,415	3,766	3,766	9,288	4,755	3,529	2,404	2,404	1,411	56,132	
4 Total NUG: Hydro	4,099	7,914	9,848	9,380	7,332	8,044	6,671	6,674	13,007	8,120	6,224	4,026	4,047	2,997	98,384	
NUG: Renewables																
5 Ashland Solar Project	1	0	0	0	1	1	1	1	1	1	2	1	1	1	12	
6 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7 Total NUG: Renewables	1	0	0	0	1	1	1	1	1	1	2	1	1	1	12	
Total Non-Utility Generating Resources																
8 Federal Entities	4,100	7,914	9,848	9,381	7,333	8,045	6,672	6,674	13,009	8,122	6,226	4,026	4,047	2,998	98,396	
9 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
12 Total Non-Utility Generation	4,100	7,914	9,848	9,381	7,333	8,045	6,672	6,674	13,009	8,122	6,226	4,026	4,047	2,998	98,396	

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TOTAL PNW REGIONAL HYDRO ANALYSIS

**2.7 TOTAL PNW REGIONAL HYDRO RESOURCES
(Includes PNW Regulated, Independent, and NUG Hydro)
Monthly Energy in Average Megawatts using 70-Water Conditions
For FY 2010 and 2011**

Table 2.7.1 FY 2010 Total PNW Regional Hydro78
Table 2.7.2 FY 2011 Total PNW Regional Hydro80

Table 2.7.1
2009-2010 Fiscal Year
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
[55] 2010 Initial Rate Case (Final)
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1929	11,305	13,949	13,497	12,320	12,045	10,981	10,768	13,223	13,227	15,640	13,743	12,180	10,004	10,259	12,504
1930	11,191	13,451	13,030	12,686	12,402	11,285	11,320	12,902	12,718	13,008	13,730	11,210	10,350	10,320	12,226
1931	10,849	13,339	13,193	12,783	11,842	10,612	11,270	9,601	12,758	12,533	13,365	12,484	10,675	10,748	12,003
1932	10,091	12,432	13,140	12,106	9,662	13,160	16,950	21,017	22,463	20,295	15,505	12,272	11,335	10,909	14,212
1933	11,374	12,890	15,478	19,911	16,644	12,019	15,348	16,035	19,863	20,446	20,038	16,658	13,800	12,170	15,980
1934	13,430	17,507	22,656	23,109	21,934	19,360	20,790	21,074	20,525	18,456	14,856	11,311	10,075	10,509	17,831
1935	11,210	12,720	14,524	18,692	18,620	11,696	14,699	15,526	19,295	17,570	17,291	14,551	11,297	10,167	14,985
1936	11,051	13,471	13,090	12,131	12,498	11,163	12,025	19,025	20,704	19,823	14,015	12,960	10,753	9,632	13,747
1937	11,035	13,451	13,395	12,888	11,235	9,833	9,675	10,577	14,622	14,083	12,746	13,426	11,223	10,441	12,181
1938	11,184	13,362	15,022	18,800	15,673	15,452	17,055	21,769	23,095	19,614	16,351	12,143	10,314	11,062	15,855
1939	11,470	12,829	13,390	14,044	13,539	11,929	12,561	18,646	20,585	16,228	13,476	11,047	9,652	9,631	13,590
1940	11,440	13,575	14,599	14,050	14,956	15,067	14,251	17,355	17,471	16,977	12,084	10,476	9,703	10,303	13,868
1941	10,975	13,200	13,600	13,049	13,189	12,039	11,336	13,000	13,729	13,132	13,115	11,921	10,692	11,444	12,579
1942	10,373	13,114	15,589	15,096	14,289	12,981	11,824	16,484	17,520	18,932	17,873	14,110	11,122	10,652	14,432
1943	11,372	13,340	15,037	18,055	18,104	16,821	22,099	22,362	22,535	20,624	19,094	13,937	11,142	10,007	16,647
1944	10,877	13,662	13,687	12,674	12,249	12,027	10,864	12,620	12,209	12,043	11,762	11,812	10,409	11,007	12,087
1945	10,088	12,980	13,087	12,461	11,056	9,317	9,422	9,226	18,568	18,187	13,439	12,404	10,408	10,031	12,495
1946	10,903	14,034	15,340	17,023	14,443	17,640	18,914	22,164	23,107	20,216	18,222	13,698	11,760	11,191	16,282
1947	11,301	14,106	19,567	19,477	20,661	18,564	16,630	18,881	21,326	20,136	18,019	13,057	11,349	10,901	17,001
1948	15,910	17,679	16,630	21,604	15,751	15,285	15,103	20,002	23,114	20,891	19,993	16,164	14,197	12,049	17,637
1949	12,313	13,718	14,799	13,149	15,527	18,290	18,370	21,790	23,208	20,189	13,257	12,167	9,799	9,564	15,423
1950	11,282	13,652	14,795	18,269	20,316	20,156	19,557	20,374	21,586	20,166	20,215	15,010	13,293	11,495	17,171
1951	13,995	17,209	21,128	23,640	23,021	20,703	21,365	22,215	22,690	20,176	19,958	15,806	12,182	11,208	19,126
1952	14,929	15,637	16,955	21,139	17,507	13,637	19,401	21,715	23,259	20,770	17,055	13,502	11,531	10,259	17,019
1953	11,205	13,060	13,475	14,167	19,052	14,626	11,226	16,882	21,088	20,763	20,266	14,167	11,984	11,037	15,489
1954	12,286	14,282	16,435	18,263	20,726	15,649	17,470	17,945	22,185	20,129	20,225	18,682	17,525	15,102	17,591
1955	12,458	15,756	15,808	14,274	12,884	12,381	12,608	14,526	17,154	20,343	20,122	16,642	13,246	10,988	15,057
1956	13,284	17,235	20,342	23,886	20,417	19,582	20,111	22,199	22,972	20,752	20,234	14,529	12,969	11,327	18,744
1957	12,851	13,944	15,680	16,187	15,705	17,233	17,059	18,507	23,306	20,490	15,216	12,850	10,355	10,601	15,883
1958	11,375	13,145	14,479	16,660	17,537	16,122	15,221	19,492	23,231	20,498	15,022	12,747	11,042	10,361	15,640
1959	11,938	15,294	18,492	22,742	20,227	15,972	17,118	18,405	21,277	19,905	17,332	14,776	12,616	15,543	17,515
1960	16,984	19,442	18,933	19,605	17,870	15,833	20,439	20,045	20,000	19,992	16,990	13,817	10,762	11,029	17,434
1961	11,593	13,804	13,877	18,531	18,117	17,362	17,228	16,224	21,496	19,756	15,929	13,136	11,968	10,121	15,822
1962	10,791	13,318	15,589	16,898	16,262	12,804	15,617	22,279	21,045	19,995	14,380	13,194	11,084	10,029	15,183
1963	12,880	15,673	18,091	18,440	17,643	15,258	12,809	15,539	18,820	18,349	17,274	14,220	11,792	10,972	15,882
1964	11,117	13,828	14,763	16,323	14,860	11,984	14,927	13,682	20,166	20,995	20,089	16,566	12,095	12,714	15,456
1965	13,284	14,970	20,202	23,756	22,885	18,707	16,028	22,313	22,731	20,314	16,991	15,281	13,465	11,746	18,261
1966	12,503	13,361	14,660	17,965	14,726	13,150	15,799	18,197	19,248	18,453	17,443	14,009	11,612	10,494	15,151
1967	11,182	12,886	15,599	21,930	21,035	16,139	14,073	12,727	19,990	20,785	19,996	15,223	12,077	11,163	16,480
1968	12,324	13,756	15,047	19,653	18,758	17,237	10,730	13,838	17,628	19,998	18,909	15,040	13,164	14,022	16,143
1969	13,880	17,201	17,101	23,078	20,202	16,154	21,002	22,077	23,304	20,377	18,661	12,772	10,778	10,758	17,836

Table 2.7.1 - Continued
2009-2010 Fiscal Year
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
[55] 2010 Initial Rate Case (Final)
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1970	12,221	13,565	13,797	15,493	17,233	16,131	12,440	14,681	19,207	20,694	15,943	12,737	10,238	10,010	14,945
1971	11,274	13,248	15,303	22,749	22,724	19,891	19,321	20,954	23,027	20,850	20,751	17,206	13,661	11,855	18,104
1972	12,736	14,261	15,353	22,697	23,095	23,085	22,354	20,390	22,910	20,849	20,321	18,365	15,808	12,468	18,853
1973	12,322	13,775	16,522	16,265	13,682	13,195	9,952	13,241	14,919	14,011	13,722	10,959	9,425	9,973	13,348
1974	11,086	12,629	18,288	24,089	23,016	22,222	21,957	22,159	22,731	20,721	20,392	16,541	14,022	11,575	18,674
1975	10,981	13,364	14,129	17,828	16,427	16,522	12,580	15,835	22,052	20,821	20,676	13,464	13,154	12,139	16,038
1976	14,077	17,535	22,675	23,736	21,346	17,455	19,941	21,179	23,012	20,621	20,115	19,076	18,930	16,530	19,722
1977	12,185	13,866	13,562	12,573	12,519	11,698	10,393	10,303	11,323	10,775	11,824	12,259	11,019	10,667	11,915
1978	9,139	11,831	16,487	16,181	15,592	14,511	18,459	17,603	21,296	18,720	17,512	12,897	12,002	13,887	15,470
1979	12,273	14,012	13,387	14,513	15,335	15,958	12,396	14,452	20,237	15,117	13,081	10,522	9,614	9,765	13,931
1980	10,941	13,367	14,737	13,021	13,913	13,407	12,131	18,972	23,029	20,463	14,844	12,264	10,272	10,923	14,622
1981	11,279	14,115	19,881	22,346	18,527	14,960	11,033	15,570	18,044	20,071	19,745	16,610	14,421	11,211	16,583
1982	11,936	14,373	15,293	19,488	22,959	22,120	17,768	18,680	22,731	20,388	19,449	16,736	12,964	13,503	17,943
1983	13,780	14,940	16,529	21,478	18,169	21,891	18,229	19,291	21,487	20,708	20,428	16,850	13,227	12,295	17,959
1984	12,178	18,399	15,589	22,913	18,711	19,646	18,785	20,362	19,024	20,763	19,896	14,599	11,577	11,693	17,623
1985	12,128	15,281	14,628	16,019	13,814	14,085	18,447	19,208	21,693	17,274	12,643	10,084	9,396	10,595	14,727
1986	12,060	16,012	12,886	19,279	19,945	22,104	20,857	19,743	18,442	19,274	15,726	13,029	10,727	10,184	16,508
1987	11,080	14,825	14,490	13,766	15,778	12,515	11,912	16,282	17,421	16,030	13,260	10,981	9,461	9,659	13,595
1988	10,435	13,040	12,765	11,838	11,670	11,393	11,150	15,851	14,669	11,992	13,998	12,659	10,743	10,103	12,259
1989	10,135	12,717	14,332	13,387	14,020	13,392	17,605	20,455	20,441	17,345	13,800	10,450	10,032	10,147	14,082
1990	10,945	13,678	17,129	20,163	17,924	14,810	18,243	21,306	19,524	19,831	16,357	13,882	12,474	9,924	16,103
1991	10,733	17,559	17,192	21,317	21,281	14,090	16,003	16,911	21,497	19,551	19,795	16,373	12,848	10,632	17,059
1992	10,722	13,823	13,036	13,560	15,087	13,668	10,672	14,006	13,615	13,041	12,693	10,031	9,522	9,179	12,545
1993	10,513	13,000	13,460	12,499	11,810	12,164	13,699	14,250	19,575	14,831	14,834	12,645	11,543	9,581	13,195
1994	10,470	13,896	13,499	13,645	14,506	12,611	11,306	16,274	14,774	13,036	13,513	10,680	9,595	9,448	12,777
1995	10,340	12,261	14,668	15,173	17,939	17,854	16,967	14,657	19,288	19,032	17,177	13,669	11,098	10,637	15,214
1996	12,709	19,645	23,149	23,752	23,040	22,516	20,318	22,442	23,029	20,359	20,088	16,182	11,804	11,370	19,586
1997	12,128	14,021	16,958	23,990	23,027	22,071	20,352	22,208	23,033	20,704	20,465	16,437	13,156	14,076	18,879
1998	17,021	16,187	14,990	19,338	18,721	15,776	13,831	16,305	19,945	20,599	17,223	13,550	10,865	10,753	16,486

Table 2.7.2
2010-2011 Fiscal Year
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
[55] 2010 Initial Rate Case (Final)
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1929	11,320	13,968	13,500	12,321	12,046	11,255	11,530	12,026	13,216	15,621	13,736	12,182	9,991	10,260	12,509
1930	11,205	13,468	13,031	12,688	12,392	11,280	11,312	12,892	12,711	12,998	13,730	11,211	10,350	10,323	12,226
1931	10,865	13,361	13,197	12,783	11,839	10,607	11,261	9,594	12,742	12,521	13,366	12,493	10,671	10,751	12,003
1932	10,108	12,450	13,143	12,102	9,657	13,536	16,159	20,876	22,422	21,625	15,496	12,279	11,332	10,912	14,315
1933	11,390	12,880	15,472	19,882	16,621	12,015	15,346	16,038	19,468	21,796	20,340	16,529	13,924	12,169	16,079
1934	13,432	17,491	22,907	23,505	22,302	19,319	20,675	20,763	20,064	18,034	15,318	11,305	10,068	10,506	17,857
1935	11,223	12,724	14,518	18,679	18,594	11,692	14,697	15,526	19,185	17,545	17,254	14,657	11,298	10,171	14,973
1936	11,069	13,493	13,094	12,128	12,498	11,553	11,197	19,029	20,671	19,792	14,018	12,962	10,740	9,635	13,743
1937	11,049	13,469	13,397	12,890	11,235	9,829	9,666	10,571	14,604	14,043	12,729	13,430	11,211	10,444	12,177
1938	11,201	13,370	15,013	18,787	15,654	15,449	17,043	21,641	22,589	19,578	16,352	12,150	10,304	11,065	15,802
1939	11,485	12,847	13,387	14,039	13,538	11,923	12,549	18,642	20,469	16,217	13,467	11,049	9,652	9,629	13,579
1940	11,457	13,594	14,594	14,046	14,948	15,057	14,240	17,351	17,462	16,973	12,083	10,482	9,694	10,305	13,867
1941	10,993	13,219	13,599	13,048	13,188	12,038	11,333	13,003	13,723	13,127	13,116	11,925	10,694	11,447	12,581
1942	10,381	13,125	15,575	15,095	14,288	12,980	11,815	16,480	17,511	18,917	17,830	14,224	11,121	10,650	14,431
1943	11,387	13,350	15,031	18,045	18,077	16,816	21,994	22,527	22,085	21,968	19,029	14,046	11,143	10,004	16,720
1944	10,892	13,681	13,688	12,962	12,226	12,005	11,236	11,746	12,204	12,032	11,751	11,812	10,406	11,004	12,087
1945	10,101	13,001	13,090	12,456	11,262	9,108	9,420	9,224	18,552	18,176	13,440	12,395	10,397	10,031	12,495
1946	10,916	14,051	15,336	17,008	14,439	17,636	18,854	22,060	22,653	20,181	18,176	13,806	11,762	11,185	16,235
1947	11,314	14,118	19,523	19,470	20,622	18,549	16,629	18,867	21,303	21,162	17,971	13,161	11,332	10,903	17,078
1948	15,886	17,669	16,628	21,575	15,727	15,280	15,102	19,980	23,354	22,224	20,320	16,269	14,187	12,051	17,790
1949	12,325	13,734	14,800	13,149	15,505	18,253	18,337	21,639	23,254	20,997	13,247	12,165	9,795	9,560	15,483
1950	11,297	13,659	14,791	18,260	20,282	20,111	19,497	20,370	21,178	21,497	20,147	15,114	13,277	11,497	17,237
1951	14,002	17,193	21,070	24,042	23,369	19,360	21,234	21,959	22,173	20,229	20,297	15,903	12,175	11,204	19,048
1952	14,926	15,652	16,955	21,114	17,484	13,632	19,302	21,660	23,237	21,650	17,007	13,610	11,531	10,255	17,080
1953	11,220	13,080	13,479	14,151	19,021	14,620	11,610	16,758	20,885	22,130	20,583	14,273	11,970	11,039	15,626
1954	12,301	14,297	16,423	18,251	20,693	15,641	17,464	17,941	21,741	21,474	20,532	18,348	17,391	15,148	17,673
1955	12,471	15,773	15,811	14,274	12,883	12,551	12,605	14,527	17,151	21,698	20,441	16,643	13,379	10,982	15,218
1956	13,284	17,217	20,281	23,811	20,386	19,547	20,049	22,374	22,808	22,103	20,546	14,633	12,966	11,323	18,860
1957	12,863	13,961	15,674	16,189	15,704	17,226	17,051	18,503	23,632	21,859	15,216	12,846	10,349	10,597	16,025
1958	11,391	13,164	14,477	16,647	17,506	16,120	15,215	19,479	23,592	21,836	15,018	12,749	11,030	10,362	15,779
1959	11,955	15,301	18,464	22,688	20,194	15,969	17,115	18,321	20,834	21,281	17,283	14,884	12,604	15,514	17,579
1960	16,956	19,397	18,909	19,601	17,843	15,831	20,391	19,901	19,885	21,242	16,993	13,817	10,757	11,016	17,509
1961	11,608	13,811	13,876	18,517	18,079	17,353	17,221	16,220	21,056	21,099	15,922	13,139	11,955	10,122	15,892
1962	10,806	13,335	15,587	16,879	16,234	12,803	15,603	22,123	20,806	21,187	14,377	13,195	11,083	10,025	15,253
1963	12,895	15,677	18,063	18,433	17,608	15,250	12,803	15,537	18,811	18,340	17,238	14,325	11,789	10,971	15,876
1964	11,133	13,844	14,762	16,319	14,859	12,045	15,035	13,758	20,118	22,323	20,389	16,494	12,210	12,712	15,604
1965	13,294	14,988	20,145	23,821	22,709	18,691	15,905	22,501	22,239	21,421	16,940	15,383	13,461	11,740	18,301
1966	12,519	13,375	14,662	17,960	14,726	13,149	15,791	18,194	19,207	18,442	17,407	14,116	11,608	10,493	15,150
1967	11,198	12,902	15,593	21,898	20,999	16,134	14,070	12,725	19,950	22,123	19,884	15,262	12,065	11,166	16,576
1968	12,331	13,765	15,039	19,638	18,712	17,231	10,726	13,840	17,624	19,983	18,783	15,138	13,165	14,010	16,129
1969	13,887	17,207	17,100	23,025	20,152	16,183	20,895	22,087	23,132	21,166	18,531	12,878	10,773	10,750	17,871

Table 2.7.2 - Continued
2010-2011 Fiscal Year
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
[55] 2010 Initial Rate Case (Final)
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1970	12,237	13,583	13,798	15,473	17,202	16,128	12,436	14,681	19,197	22,019	15,945	12,740	10,226	10,010	15,053
1971	11,290	13,262	15,302	22,695	22,971	19,302	19,277	20,849	23,074	22,195	21,046	17,078	13,790	11,852	18,207
1972	12,752	14,276	15,354	22,661	23,185	22,915	22,232	20,283	23,003	22,187	20,632	18,223	15,919	12,465	18,980
1973	12,338	13,791	16,513	16,261	13,679	13,196	9,950	13,244	14,914	14,000	13,720	10,953	9,417	9,967	13,347
1974	11,102	12,638	18,262	24,496	23,383	22,141	21,850	22,337	22,445	22,071	20,692	16,534	14,150	11,575	18,853
1975	10,995	13,383	14,124	17,808	16,400	16,517	12,578	15,838	21,634	22,171	20,982	13,563	13,148	12,136	16,143
1976	14,092	17,526	22,617	24,126	20,656	17,415	19,879	21,123	22,776	21,885	20,427	18,683	18,538	16,578	19,767
1977	12,200	13,885	13,565	12,861	12,495	11,675	10,370	9,805	11,317	10,762	11,825	12,252	11,009	10,664	11,914
1978	9,155	11,850	16,433	16,167	15,583	14,507	18,400	17,598	21,041	18,697	17,464	13,011	11,988	13,854	15,437
1979	12,288	14,027	13,382	14,512	15,317	15,954	12,390	14,447	20,225	15,093	13,072	10,521	9,607	9,764	13,926
1980	10,956	13,382	14,733	13,016	13,908	13,402	12,124	18,970	22,878	20,878	14,836	12,265	10,266	10,922	16,644
1981	11,288	14,130	19,858	22,192	18,502	15,109	11,026	15,566	18,031	21,428	19,496	16,481	14,533	11,210	16,671
1982	11,951	14,388	15,289	19,478	23,015	21,753	17,763	18,677	22,226	21,724	19,396	16,675	13,084	13,479	17,983
1983	13,794	14,955	16,523	21,445	18,143	21,781	18,172	19,289	21,438	20,676	20,755	16,838	13,347	12,294	17,969
1984	12,192	18,394	15,584	22,859	18,686	19,592	18,727	20,307	19,011	22,100	19,851	14,707	11,570	11,691	17,718
1985	12,141	15,295	14,623	16,009	13,808	14,081	18,389	19,195	21,657	17,251	12,634	10,081	9,389	10,592	14,718
1986	12,074	16,028	12,881	19,268	19,868	21,962	20,752	19,741	18,429	19,252	15,720	13,031	10,720	10,182	16,482
1987	11,094	14,840	14,485	13,763	15,775	12,509	11,906	16,280	17,408	16,010	13,253	10,980	9,454	9,657	13,592
1988	10,443	13,055	12,760	11,834	11,664	11,369	11,511	15,466	14,652	11,966	14,003	12,660	10,737	10,102	12,253
1989	10,149	12,772	14,327	13,382	14,015	13,385	17,564	20,439	20,328	17,322	13,793	10,448	10,026	10,146	14,071
1990	10,959	13,693	17,128	20,156	17,901	14,805	18,241	21,037	19,278	21,167	16,350	13,884	12,470	9,922	16,181
1991	10,747	17,563	17,192	21,286	21,241	14,085	15,998	16,908	21,139	19,892	20,114	16,242	12,967	10,631	17,079
1992	10,734	13,835	13,033	13,560	15,083	13,664	10,764	13,911	13,603	13,024	12,687	10,030	9,517	9,177	12,543
1993	10,526	13,015	13,458	12,498	11,805	12,157	13,691	14,244	19,552	14,807	14,827	12,647	11,536	9,579	13,190
1994	10,477	13,912	13,495	13,642	14,502	12,606	11,299	16,271	14,759	13,011	13,506	10,679	9,588	9,446	12,773
1995	10,352	12,276	14,668	15,169	17,910	17,829	16,964	14,652	19,274	19,012	17,123	13,776	11,091	10,637	15,208
1996	12,724	19,617	23,426	24,154	23,393	22,422	20,262	22,621	22,558	21,694	20,403	16,095	11,915	11,369	19,767
1997	12,143	14,034	16,932	24,394	23,394	21,967	20,297	22,389	22,682	22,052	20,779	16,427	13,277	14,051	19,052
1998	17,010	16,202	14,986	19,326	18,697	15,772	13,825	16,302	19,919	21,947	17,171	13,656	10,858	10,752	16,592

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**ESTIMATED PURCHASE MW ELIGIBLE FOR
4(h)(10)C CREDIT**

**2.8 ESTIMATED PURCHASE MW ELIGIBLE FOR 4(h)(10)C CREDIT
Monthly Energy in Average Megawatts using 70-Water Conditions**

Table 2.8.1 4(h)(10)C Power Purchase Amounts84

**Table 2.8.1
4(h)(10)(C) Power Purchase Amounts
Energy in Average Megawatts**

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep
1929	1,209	325	1,698	2,120	452	980	601	-1,076	119	0	0	-565	545	261
1930	-621	-1,372	1,701	1,917	-772	742	139	198	675	1,294	0	1,349	367	0
1931	-65	-728	900	1,015	1,118	1,072	608	1,694	1,034	-3	-26	-1,069	-99	153
1932	312	565	1,650	2,754	3,108	1,684	0	0	0	0	0	402	0	65
1933	263	1,534	213	0	0	1,279	0	0	0	0	0	0	0	18
1934	212	0	0	0	0	0	0	0	0	-545	-2,073	815	258	-430
1935	317	2,138	1,396	0	0	1,514	0	303	0	0	-162	0	0	896
1936	4	-652	1,264	2,852	-799	1,632	389	0	0	0	-46	0	0	555
1937	-463	-1,332	905	938	384	2,208	981	735	509	1,467	190	-1,830	-636	95
1938	312	1,457	882	0	0	0	0	0	0	0	0	-1,262	170	0
1939	274	540	2,171	2,164	389	1,515	0	0	0	-1,747	-1,136	1,057	694	811
1940	259	-51	474	1,266	437	0	0	0	0	-2,892	-1,129	895	291	0
1941	219	17	1,250	2,116	502	-497	489	0	-672	-181	-739	-1,133	-32	0
1942	670	60	136	206	755	-1,046	-79	0	0	0	0	0	0	64
1943	77	1,404	1,199	0	0	0	0	0	0	0	0	0	162	1,138
1944	1,269	280	1,836	985	1,634	74	586	-665	242	346	-1,561	-1,246	-358	-785
1945	515	0	1,597	2,569	2,758	2,680	1,502	1,896	0	0	0	-1,325	-632	-538
1946	695	460	878	613	0	0	0	0	0	0	0	0	0	466
1947	1,080	587	0	0	0	0	0	0	0	0	0	0	48	625
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	113
1949	537	736	793	1,861	0	0	0	0	0	0	-98	-1,000	-149	-42
1950	365	1,351	1,113	0	0	0	0	0	0	0	0	0	0	422
1951	8	0	0	0	0	0	0	0	0	0	0	0	0	730
1952	0	0	0	0	0	351	0	0	0	0	0	0	0	694
1953	-11	-303	1,636	2,202	0	0	959	0	0	0	0	0	0	667
1954	528	467	25	0	0	0	0	0	0	0	0	0	0	0
1955	522	0	0	1,530	-796	-450	167	0	0	0	0	0	0	920
1956	407	0	0	0	0	0	0	0	0	0	0	0	0	505
1957	363	718	541	176	60	0	0	0	0	0	0	126	406	550
1958	758	665	1,184	101	0	0	0	0	0	0	0	131	0	650
1959	576	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0	0	188	520
1961	696	908	1,078	0	0	0	0	0	0	0	0	0	0	418
1962	841	656	577	222	0	-381	0	0	0	0	-120	0	0	949
1963	57	0	0	0	0	0	0	-212	0	0	0	0	0	574
1964	841	741	592	432	196	216	0	293	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	429
1966	309	883	444	0	103	609	0	0	0	0	0	0	0	1,041
1967	546	1,110	361	0	0	0	0	932	0	0	0	0	0	372
1968	604	824	504	0	0	0	1,217	-1,601	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	220	797

**Table 2.8.1
4(h)(10)(C) Power Purchase Amounts
Energy in Average Megawatts**

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep
1970	499	606	1,274	1,134	0	0	30	-1,847	0	0	0	-489	385	1,016
1971	559	859	715	0	0	0	0	0	0	0	0	0	0	152
1972	414	676	353	0	0	0	0	0	0	0	0	0	0	102
1973	555	581	0	481	1,159	-1,257	924	-763	-1,354	-279	0	85	113	-176
1974	234	1,533	0	0	0	0	0	0	0	0	0	0	0	361
1975	1,139	830	1,442	0	0	0	179	0	0	0	0	0	0	76
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	494	189	1,612	1,922	664	-242	787	478	612	-764	-1,461	-1,390	-640	-1,124
1978	1,319	1,382	0	0	0	385	0	0	0	0	0	0	0	0
1979	0	466	2,016	1,618	-1,912	0	0	-1,798	0	461	-1,649	-653	421	625
1980	-108	-788	875	3,216	577	143	0	0	0	0	-1,081	-376	264	542
1981	716	275	0	0	0	0	303	0	0	0	0	0	0	569
1982	663	103	545	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	84
1984	532	0	416	0	0	0	0	0	0	0	0	0	0	245
1985	702	41	550	0	1,031	-47	0	0	0	0	-1,997	-391	233	254
1986	237	0	1,722	0	0	0	0	0	0	0	-1,925	0	125	1,186
1987	1,092	173	1,224	1,608	-807	1,087	276	0	0	-1,665	-1,754	475	-20	46
1988	-698	-893	1,911	1,492	1,449	802	11	261	848	2,727	-550	-2,064	-555	-468
1989	850	1,328	1,511	2,334	0	287	0	0	0	0	-2,055	765	410	411
1990	470	824	0	0	0	0	0	0	0	0	0	0	0	892
1991	1,116	0	0	0	0	273	0	0	0	0	0	0	0	928
1992	21	306	2,132	1,688	113	171	439	-1,375	305	-1,618	-1,913	-247	-393	-629
1993	339	242	1,425	2,366	1,379	-128	0	0	0	583	0	-47	0	789
1994	798	-897	972	2,223	-958	1,159	0	236	598	375	-319	460	-91	-431
1995	-241	355	1,190	1,788	0	0	0	382	0	0	0	0	0	596
1996	203	0	0	0	0	0	0	0	0	0	0	0	0	580
1997	724	816	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	604	0	0	0	0	0	0	0	0	0	51	609

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**HYDSIM HYDRO REGUALTION STUDY
ASSUMPTIONS**

2.9 HYDSIM HYDRO REGULATION STUDY ASSUMPTIONS

Section 2.9.1 HYDSIM Assumptions for 2010 and 201189

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2.9.1 HYDSIM Assumptions for 2010 and 20011

Date Requested: September 22, 2008

STUDY NUMBER: 08_RateCase10_REV
and 08_RateCase10_REV

Requested By: BPA

Due Date: October 6, 2008 (ASAP)

Purpose of Study: This is a 70-year continuous study of the system operation under the May 5, 2008 final BiOp RPA for 2010 rate case study.

Directory of Study:

AER Step:
Q:\RATES\08_RATECASE09_REV\AER

OPER Step:
Q:\RATES\08_RATECASE10_REV\OPER
Q:\RATES\08_RATECASE11_REV\OPER

Name of Regulator: Jennie Tran, Geraldine Mason, Kim Fodrea

AER STEP

- This AER Step is used to determine the project minimum elevations (or maximum draft) using load equal to OY08 Firm Energy Load Carrying Capability (FELCC) and unlimited secondary market. Minimum elevations from the AER Step will be input into the Operational Step.
- This is a **continuous** study mostly based on the OY08 PNCA data submittal. The study will begin on October 1, 1928 and end on September 30, 1998, a 70-year study (FISCAL YEAR OCT 2007 – SEP 2008); The Coordinated System generation does not include the Tacoma projects, as well as Brownlee, Oxbow, and Hell Canyon.
- **Stream Flow:** The 70 years of stream flows used are from “Modified Streamflows 2000 Level of Irrigation”. They contain 2000 level irrigation depletion’s. (See “Seasonal Volumes and Statistics, 1928-1999, 2000 Level Modified Streamflows Computed Seasonal Volumes 71-year Statistics, Columbia River Basin, Prepared for BPA, May 2004.” Data on pg. 203, for instance, is used at Grand Coulee.) Adjustments to these 2000 level modified stream flows are due to the Bureau of Reclamation’s updated **Grand Coulee pumping schedule** for the Columbia Basin Project. This pumping schedule is included in the BOR’s February 1, 2007 preliminary PNCA data submittal. No adjustments are made for **NTSA** storage and release. The inflows to Brownlee are adjusted by the regulation of the Upper Snake reservoirs to release up to 487 kaf provided by the Bureau of Reclamation on June 1, 2007, and reflects the Upper Snake BiOp operation. (Brownlee inflows in low water years reflect an operation of Upper Snake reservoirs that shifts some flow augmentation for salmon from summer to spring, often referred to as shifted Brownlee inflows.)
- **Plant Data:** The OY08 plant data will be used for all projects except Hungry Horse plant data from OY09 (0% storage table).
- **Loads:** All FELCC is taken from the OY08 Critical Period study run by the Northwest Power Pool (NWPP). The NWPP study has a one-year critical period (August 16, 1936 through March 31, 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) are not used to meet PNCA FELCC in these studies. Also in this study, the generation from Tacoma projects is no longer included in the PNCA’s Coordinated System FELCC computation. The PNCA hydro FELCC includes Hydro-Independent generation from 1936-37 so BPA revises it to reflect the Hydro-Independent generation for each of the 70 years to develop the hydro-residual load required for this study. There is no limit assumed in the secondary market.
- **Unit Outages:** The unit outages for all projects are from the PNCA OY08.
- **Initial Contents** All projects are initialized to September 30, 1929 storage ending content from the 50-yr continuous final Rates study for 2007 (Q:\RATES\06\04RATE_07) except Mica, Arrow, Duncan projects are initialized to the same content from DOP09 study (Q:\TREATY\DOP09\FY09_RATE).

- **CRC Rule Curves:** Critical Rule Curves (CRC) are in accordance with PNCA 2008 adopted system critical rule curves. However, CRC for Horse is adjusted down by 45.1 ksf from full for 0% bank storage table. They are as follows: 1st year = OY08 CRC1; 2nd year = empty; 3rd year = empty; and 4th year = empty.
- **Flood Control Rule Curves:** These curves are the highest contents allowed for each reservoir and supersede all other reservoir elevation and content objectives. The curves are based on forecasts; no shift to Coulee; 3.6/4.08 Arrow/Mica split; and VARQ at Horse and Libby. They were provided by the Corps of Engineers in April 2008. Variable flow flood control in December at Libby is computed by BPA based on Jan1 April-August forecast at Libby. The flood control target draft at Libby from full in December is 1.4 Maf if the forecast is less than 5500 Kaf and 2.0 Maf if the forecast is greater than or equal to 5900 Kaf. The straight line interpolation between 1.4 – 2.0 Maf flood control draft from full when the forecast is in between 5500 – 5900 Kaf. The Mica, Arrow, Duncan projects' flood control requirements will be the same as used in the DOP09 study which has 3/4 Arrow/Mica split; non-shifted VARQ at Horse (Q:\hyd\sim\dat\pnca\vruc_bpa\VQHG11Apr08_SYN34_NS_70.HYMOD). The flood control curves for Coulee are adjusted for the amount of storage capability available below URC on April 30 each year for Mica, Arrow and Duncan to more closely reflect the methodology used in real-time operations. BPA adjusts the flood control curves to shift some of Dworshak's requirement to Grand Coulee when possible.
- **ECC Curves:** VECC's are calculated using OY08 Power Discharge Requirements (PDR's), distribution factors and forecast errors which are used in PNCA planning. The Grand Coulee ECC lower limits are 1225 feet (420.5 ksf) in January-April 30 and 1240 feet (843.9 ksf) in May. The Canadian DOP09 VECC's are based on forecasts, 3/4 Arrow/Mica split, non-shifted, VarQ flood control at Horse only. The VECCs for the Federal projects are based on the 70-year volume forecasts.

Project Specific Data:

- **Mica, Duncan and Arrow:** The Canadian Treaty projects are fixed to the 70-year DOP09 Treaty Storage Regulation run by BPA on August 13, 2008. Mica data logic in the Hydrosim program is turned off. Mica's minimum storage content is reset to 0.0 ksf so that drafting below 2295.9 ksf (normal minimum content) can occur. Horse's storage table is changed from 3% to 0% bank storage.
- **Libby** has a maximum outflow of 26,500 cfs in all periods. It can be drafted to meet FELCC in September - November as long as it does not draft below December Variable URC. (If the December forecast at Libby for Apr-Aug periods is less than 5500 kaf, then the flood control at Libby in December is 2426.6 ft (1804.7 ksf), If the forecast is greater than 5900 kaf, then the flood control in December is 2411.0 ft (1502.2 ksf). The flood control data is interpolated between 1804.7 ksf and 1502.2 ksf if the forecast is between 5500 – 5900 kaf. In January through mid-April, Libby is operated on minimum flow (4,000 cfs) or VARQ flood control objectives as defined in the BiOP. It should be noted that Libby does violate URC for Corra Linn's IJC operation. Sturgeon and Bull Trout flow requirements in May-July based on May 1 April-August Kuehl-Moffit forecast at Libby are as follows:

PNCA OY08 COE Data Submittal (USFWS 2006 Biop, February 18, 2006).

<u>Libby May1 Apr-Aug forecast Interval (MAF)</u>	<u>Sturgeon flow Volume provided from Libby (KAF)</u>
<4800	0
4800-5400	800
5400-6350	800-1120
6350-7400	1120-1200
7400-8500	1200
8500-8900	1200-1600
>8900	1600

<u>Libby May 1 Apr-Aug forecast Interval (MAF)</u>	<u>Bull Trout minimum flow in May15-Sep30 (KCFS)</u>
<4800	6.0
4800-6000	7.0
6000-6700	8.0
>6700	9.0

Libby is operated during May-June for Sturgeon and in May 15 – September 30 for Bull Trout in all years. The project draft limit for McNary flow augmentation is 2439 ft (2061.3 ksf) in June-August. It can draft below 2439 ft to meet Bull Trout flow objective. Libby's maximum outflow from mid-April through August is powerhouse hydraulic capacity without spill unless a higher outflow is required to maintain the required VARQ flood control space. Libby should not draft below the variable computed straight line content between June 30 and August draft limit of 2061.3 ksf (2439 ft) during July and August in order to minimize occurrences of a second peak flow in the summer. The reservoir may draft below 2439 ft to meet the bull trout minimum flows through September.

- **Hungry Horse** can not draft below IRC (0% storage table) curves 3545 ft (1330.2 ksf), 3545 ft (1330.2 ksf), 3542 ft (1297.1 ksf), and 3533 ft (1199.4 ksf) during September through December, respectively. From January through March, Hungry Horse operates to the higher of variable IRC or Biological Rule Curve objectives but below a maximum content calculated to reduce the possibility of forced spill. The Biological rule curves are calculated using assumed inflows that are exceeded 75 percent of the time, perfect foreknowledge of the minimum outflow, and the requirement to be at flood control elevation on April 10. In April through June, Hungry Horse operates on or near flood control. On July 31, August 15 and August 31, Hungry Horse draft limit is 3560, 3550 and 3540.0 feet (1503.4, 1386.7, and 1275.0 ksf) for BIOP flow augmentation. Hungry Horse will be operated to meet the Columbia Falls minimum flow between 3200 cfs and 3500 cfs based on the April to August volume runoff between 1190 kaf and 1790 kaf at Hungry Horse. The outflow at Hungry Horse is limited to maximum turbine capacity of 12,048 cfs and no spill is allowed unless required to maintain the required flood control space. Hungry Horse will violate upper rule curve to keep its maximum outflow to 20 kcfs or below.
- **Albeni Falls** is operated to 2062.5 ft (582.4 ksf) in June – August, 2061.5 ft (535.7 ksf) in September, 2056 ft (279.0 ksf) in October, 2055 ft (234.7 ksf) in November – March, 2055.5 ft (256.9 ksf) in April 15, 2056.0 ft (279.0 ksf) in April 30, and 2058.8 ft (409.7 ksf) in May.
- **Grand Coulee** is operated to meet FELCC September through December subject to the draft limits of 1283 feet (2329.7 ksf), 1283 feet (2329.7 ksf), 1275 feet (2027.7 ksf), and 1270 feet (1839.2 ksf). In January through March, Coulee is operated to the higher of winter draft limits [1260 feet (1491.5 ksf), 1250 feet (1159.1 ksf), 1240 feet (843.9 ksf), respectively] or the Biological Rule Curve (fish vecc). The Biological Rule Curve 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. The Biological rule curves are calculated using assumed inflows which are exceeded 85 percent of the time, perfect foreknowledge of the minimum outflow, and the requirement to be at VARQ flood control elevation on April 10. On April 15, Coulee is operated on flood control. From April 30 through May, Grand Coulee may be drafted to the lower of flood control or 1280 ft (2216.3 ksf) to support Priest Rapids and McNary flow augmentation targets. In Jun - Jul, Grand Coulee draft limits are 1288 ft (2531.9 ksf), 1285 feet (2408.2 ksf), respectively to support Priest Rapids and McNary flow augmentation targets. In Au1, the draft limit for BIOP flow augmentation is 1280 ft (2216.4 ksf) if July 1 April-August runoff at The Dalles is less than 92 Maf; otherwise the draft limit is 1282 ft (2291.9 ksf). In Au2, the draft limit is 1278 ft (2140.9 ksf) if the July 1 April-August volume runoff at The Dalles is less than 92 Maf, otherwise the draft limit is 1280 ft (2216.4 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 Coulee is above 1260 feet, 1.3 feet per day when Coulee between 1260 and 1240 feet, and 1.0 feet per day when 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 a) 68% of the largest of the October or November flow at Wanapum or b) 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.
- **Priest Rapids:** From April 10 to June 30 Priest Rapids has a flow augmentation target of 135,000 cfs for Steelhead. From April 1 to April 9 the minimum flow for Priest Rapids is the same as the Vernita Bar minimum for each year.
- **Brownlee** operates to the 70-yr rule curves provided to BPA from the Northwest Power Pool on March 15, 2007. They are 432.1 ksf in Au1, 380.7 ksf in Au2, 293.8 ksf in Sep, 491.7 ksf in Nov, 436.3 ksf in Dec, 385.4 ksf in Jan, 484.7 ksf in Jun and Jul. The rule curves are vary between 226.0 ksf, 113.2 ksf, 62.9 ksf, 0.0 ksf and 74.7 ksf to full content of 491.7 ksf in Oct, Feb, Mar, Ap1, Ap2 and May, respectively.
- **Dworshak** is on minimum flow of 1300 cfs all periods or flood control objectives as defined in the BiOP, with the exception of April through August when it operates to meet Lower Granite flow augmentation targets. The NMFS BIOP place a higher priority on refilling Dworshak on June 30, so Dworshak will be operated on minimum flow or flood control during April-June. Dworshak's outflow is limited to 14,000 cfs in the flow augmentation periods and is

limited to 25,000 cfs in all other periods for downstream flood control. During the flow augmentation period, Dworshak will release no more water than necessary to meet the minimum flow requirements. For July – August, Dworshak operates to a target of 1534 ft (490.0 ksf) by the end of August. In September, draft Dworshak to 1520 ft (395.8 ksf) on September 15 and run to the minimum flow of 1300 cfs for the remainder of the month.

- **Lower Snake** projects will be **operated at MOP** in accordance with the COE data submittal and the BiOp. As identified in the BiOp, the Corps will operate Little Goose, Lower Monumental, and Ice Harbor within one foot of minimum operating pool (MOP) during the period from approximately April 3 through August 31. Lower Granite will operate within one foot of MOP from approximately April 3 through November 15 (Apr-Oct in HYDSIM modeling). MOP for Lower Granite, Little Goose, Lower Monumental and Ice Harbor is elevation 733 (225.0 ksf), 633 (260.5 ksf), 537 (180.5 ksf) and 437 feet (193.4 ksf), respectively. During the rest of the year Lower Granite, Little Goose, Lower Monumental and Ice Harbor will operate at elevation 738 (245.8 ksf), 638 (285.1 ksf), 540 (190.1 ksf) and 440 feet (204.8 ksf), respectively.
- The four lower Snake River projects (Lower Granite, Little Goose, Lower Monumental and Ice Harbor) and the four lower Columbia River projects (McNary, John Day, The Dalles and Bonneville) each are required to operate their turbines within **1% of peak efficiency** during the period of March through November. This requirement is reflected in a hydro availability file, which limits the maximum generation capability of each project in each of the fourteen periods. No other hydro outages assumed.
- Generation at these eight projects (Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville) is reduced further with the inclusion of **Juvenile Passage 2007-08 expected Fish Spill Plan**. Juvenile Passage Fish Spill at Federal projects (values less than one are percent of outflow and values greater than one are cfs), limited by Spill Caps, is as shown below. The spill caps represent completed modifications at spillways currently planned and which are used as hydroregulation modeling caps, not instantaneous. Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville have a minimum turbine flow of 11500, 11500, 11500, 9500, 50000, 50000, 50000, and 30000-cfs respectively.
- **Juvenile Passage Spill and Dissolved Gas Caps from OY08 PNCA Planning:**

HRLY/DLY SPILL CRITERIA FOR PNCA OY08 AER study					
	Spill	Min Turb	Days	Hour Ending	Spill Cap
LWG	20 kcfs 18 kcfs	11.5 kcfs	Apr 3 - Jun 20; Jun 21 - Aug 31	All hours	20 kcfs in Spring 18 kcfs in Summer
LGS	30% flow	11.5 kcfs	Apr 3 - Aug 31	All hours	44 kcfs
LMN	31 kcfs 17 kcfs	11.5 kcfs	Apr 3 - Jun 20 Jun 21 - Aug 31	All hours	31 kcfs in Spring 17 kcfs in Summer
IHR	45 kcfs day/76 kcfs night	9.5 kcfs	Apr 3 - Jun 20	All hours (13 hrs day, 11hrs night)	76 kcfs in Spring 78 kcfs in Summer
	45 kcfs day/78 kcfs night		Jun 21 - Aug 31		
MCN	40% flow	50 kcfs	Apr 20 - Jun 30	All hours	148 kcfs Apr 10-Jun 30 133 kcfs Jul 1 - Aug 31
	40% of flow alternate w/ 60% of flow		Jul 1 - Aug 31		
JDA	60% flow	50 kcfs	Apr 10 - Apr 30	12 hrs night	126 kcfs Apr-Jun 120 kcfs Jul -Aug Min Spill Req: 25% flow
	60% flow		May 1 - May 15	12 hrs night	
	60% flow		May 16 - Jun 30	13 hrs night	
	30% flow		Jul 1 - Aug 31	All hours	
TDA	40% flow	50 kcfs	Apr 10 - Aug 31	All hours	125 kcfs
BON	100 kcfs	30 kcfs	Apr 10 - Jun 30	All hours	124 kcfs
	75 kcfs day/123 kcfs night		Jul 1 - Jul 31	All hours (18 hrs day, 6 hrs night)	123 kcfs Min Spill Req: 50 kcfs
			Aug 1 - Aug 15	All hours (17 hrs day, 7 hrs night)	
			Aug 16 - Aug 31	All hours (16 hrs day, 8 hrs night)	

- **Lower Columbia fall Chum spawning** flow objectives (at Bonneville) are as follows: From November 1 through April 10 provide 125 kcfs (allow to exceed Chum flow if the projects operate to fish veccs). The priority for releasing water from upstream reservoirs for this flow augmentation is Grand Coulee, Libby, and Hungry Horse. The draft limits for Chum flow in November-December are 1275 ft (2027.6 ksf) and 1270 ft (1839.2 ksf) at Coulee. The variable draft limit for Chum flow at Libby in December is in the range of 2411 ft (1502.2 ksf) to 2426.6 ft (1804.7 ksf) based on the Jan1 Apr-Aug forecast at Libby.
- Use a **sliding scale flow augmentation target** of from 220,000 to 260,000-cfs **at McNary** based on The Dalles April 1, April - August volume runoff. A straight-line interpolation will be used for flow targets for volume forecasts between 80 and 92 Maf in the April 10 through June 30 period. The AP1 period value is prorated at 9 days at 155,000 cfs and 6 days at from 220,000 to 260,000 cfs. Maximum and minimum targets are 260,000 cfs and 220,000 cfs, respectively. July and both halves of August flow targets are 200,000 cfs. The priority for releasing water from upstream reservoirs for flow augmentation is Grand Coulee, Libby and Hungry Horse.
- **Lower Granite** also has **sliding scale flow augmentation targets**. When Lower Granite April 1, April - July runoff forecast is less than 16 Maf, then the April 3 through June 20 flow target is 85,000 cfs, and the June 21 through August 31 is 50,000 cfs. When the April 1 Lower Granite April through July forecast is greater than 20 Maf, then 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.
- **John Day** is operated at 262.5 feet (127.8 ksf) from April through September. From October through March, John Day operates to elevation 265 feet (191.0 ksf).
- Juvenile Passage **spills at non-Federal** projects will be as described below and as was submitted for OY08 PNCA planning. Wells spills the percentage described below if Chief Joe's outflow is less than 140,000 cfs; otherwise Wells spills 10, 200 cfs during April 12 – August 26.

PROJECT SPILL FOR FISH IN
PERCENT OF REGULATED FLOW (%)

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	20.1	12.5	9.0	9.0	0.0
Rock Island	10	10.0	10.0	17.0	20.0	20.0	0.0
Wanapum	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Priest Rapids	0.0	61.0	61.0	50.0	39.0	39.0	19.5

- **Kootenay Lake** is operated as necessary, up to free flow, to maintain the lake level below the IJC rule curve and the calculated “allowable elevation at Queens Bay”. This is implemented using the 5-step method developed by BPA and the Corps. After August 31, the lake level may be raised to elevation 1745.32 at the Queens Bay gage. This maximum elevation at Queens Bay is in effect through January 7. After January 7 the lake will be lowered to elevation 1744 on February 1, elevation 1742.4 on March 1, and 1739.32 on May 1. From June 1 through August 31, after the lake exceeds elevation 1739.32 feet at the Queens Bay gage, the lake shall be operated using the “allowable elevation” calculation to determine the Queens Bay maximum allowable elevation until the elevation at the Nelson gage drafts back to elevation 1743.32 feet.

OPER STEP

- All AER step criteria apply unless specifically amended below.
- **Loads:** The system is run to 2010 and 2011 Coordinated System firm loads from BPA's 2008 White Book. A secondary market limit of 10,000 aMW is used in every period of every year.
- **Unit Outages:** The unit outages for non-federal projects are from the PNCA OY08 and for federal project are from actual average 2001-07 computed for FY2010.
- **Kootenay Lake:** Grohman Narrows capacity table was updated to align with BCHydro's revised information.
- **Flood Control Rule Curves:** no change in flood control at Mica and Duncan from the AER step. Arrow flood control is updated to 3.6/4.08 Arrow/Mica split set in order to have more space available for 1 MAF flow augmentation.
- **Non-federal** projects are run to the contents that resulted in the AER step. This allows the federal projects to fill without requiring the non-federal projects to draft to meet load.
- **Lower Columbia fall spawning** flow objectives (at Bonneville) are as follows: computed variable flow from November through March for Chum flow requirement based on 11.5 or 11.3 ft tailwater elevation Bonneville most fall/winters then 16.5 ft tailwater APR1 - APR2. Grand Coulee will release water to meet the Lower Columbia fall spawning salmon flow objectives at Bonneville in November - March.
- **Lower Columbia Spring/Summer Flow Augmentation:** The January-April 15 operation of the federal reservoirs is to achieve the BiOp April 10 URC objective. Hungry Horse and Dworshak are on minimum flow from April through June 30 in all water years (No spring flow targets are used at Priest Rapid, Lower Granite, or McNary projects). This operation is intended to maximize storage in the federal projects by June 30 to maximize the water available for summer flow augmentation. During the April-June period, these projects will release above minimum outflow only as needed to meet flood control requirements. Grand Coulee will draft below flood control if required to meet the Vernita Bar flow requirement. Grand Coulee will draft to meet the variable BiOp spring flow target and summer flow target of 200 kcfs at McNary. Libby and Hungry Horse will release water in July to reduce occurrences of a second peak in flows without regard to the level of flow achieved at MCN.
- **Powerhouse Availabilities:** Reflects expected outages based on average actual 2001-2007 outages, plus the large unit outages starting in April 2010 at Chief Joseph and in April 2011 at Grand Coulee, and standard reserve requirements (5% hydro reserves, 7% thermal reserves, and 5% contingency reserves for wind using a 30% capacity factor.)

Project Specific Data:

- **Mica, Duncan and Arrow:** are fixed to the 70-year DOP09 Treaty Storage Regulation run by BPA on August 13, 2008, and then the following are added to the operations. 1) Add the trout spawning operation at Arrow where Apr2 flows are at least 15kcfs and May-June flows are equal to or greater than the preceding month whenever possible. No more than a 10kcfs decrease is allowed. 2) 3) Balance Arrow and Duncan operations to ensure that both projects are on TSR by 31 July.
- **Mica:** minimum storage content is reset to 0.0 ksfd so that drafting below 2295.9 ksfd (normal minimum content) can occur. Mica data logic in the HYDSIM program is turned off.
- **Arrow:** stores up to 1 Maf for flow augmentation in January in all years, and releases the 1 Maf (15% in May, 15% in June, and 70% in July) in years with a Feb-1 January-July forecast at The Dalles greater than 110.4 maf. The flow augmentation will all be released by July 31 allowing Arrow to be on TSR by 31 July. For trout spawning operation, Arrow operates to a minimum flow of 15,000 cfs in April 15, between 15,000 cfs and 25,000 cfs in April 30, between 15,000 cfs and 35,000 cfs in May. Arrow also has a minimum flow of 15,000 cfs in June
- **Priest Rapids:** has a flow augmentation target of 120,000 cfs in April 30 and 135,000 cfs in May for Steelhead.
- **Brownlee:** drafts to 2059.0 ft (373.5 ksfd) in July-August, 2051.5 ft (328.4 ksfd) in September. In October, Brownlee operates to a variable target content without violating a minimum flow of 9700 cfs for IPC Fall Chinook operation. Brownlee will fill to full content of 491.7 ksfd in Nov without violating minimum flow of 8500 cfs. In Dec-Apr1, Brownlee operates to 8700 cfs outflow unless a higher discharge is required to maintain flood control space. In Apr2-Jun, Brownlee is to maintain full content of 491.7 ksfd without violating a minimum flow of 8500 cfs.
- **Libby:** In years when the July 1 January-July volume forecast for The Dalles is less than 82 MAF (lowest 20th percentile), the project should attempt to operate along a computed straight line between June 30 content and a September 30 draft limit of 2439.0 ft. (2061.3 ksfd) during July and August to minimize occurrences of a second peak flow in the summer. However, due to the minimum flow for sturgeon and bull trout, which is summarized in the AER

step documentation, the project often operates below this straight line. In years when the May 1 Libby forecast for the Apr-Aug period results in a bull trout minimum for July and August of 9,000 cfs, the minimum July 31 content will be 2360 ksf to assure the 9,000 cfs can be provided without drafting below elevation 2449 ft by the end of September. The Libby operation provides the sturgeon and bull trout flows, which may sometimes exceed the flood stage at Bonners Ferry. In the fall, Libby is operated with 4800 cfs maximum outflow in October and 2000 ksf maximum content in November in order to leave more water for drafting for power purposes in December.

- **Hungry Horse** is operated to the VARQ flood control in September through December at 3560.0 feet (1503.4 ksf), 3555.7 feet (1453.0 ksf), 3555.7 feet (1453.0 ksf), and 3549.2 ft (1377.4 ksf) respectively, unless the project is trying to meet the minimum flow requirement at Columbia Falls. In years when the July 1 January-July volume forecast for The Dalles is less than 82 MAF (20th percentile), the project should not operate below the computed straight line between June 30 content and a September 30 draft limit of 3540.0 ft. (1275.0 ksf) during July and August to minimize occurrences of a second peak flow in the summer. In years when the July 1 January-July volume forecast for The Dalles is greater than or equal to 82 MAF (20th percentile), the project should not operate below the computed straight line between June 30 content and a September 30 draft limit of 3550.0 ft. (1386.7 ksf) during July and August to minimize occurrences of a second peak flow in the summer. The outflow at Hungry Horse is limited to maximum turbine capacity of 11,667 cfs and no spill is allowed unless required to maintain the required flood control space during the October-March period. Hungry Horse will also violate upper rule curve to keep its maximum outflow to 20 kcfs or below. During the flow augmentation period (April-August), the outflow is limited to a maximum of 14,000 cfs so that the Montana dissolved gas standard of 110% will not be exceeded.
- **Albeni Falls** draft Albeni to 2051 feet (57.6 ksf) by November 30 and maintain at this elevation through April
- **Chief Joseph** has a minimum turbine flow of 50,000 cfs.
- **Grand Coulee's** operates between 1283 and 1285 ft (2332.2 ksf, 2417.1 ksf) in September and October, respectively. During the November through December periods, Coulee can not draft below limits of 1278 and 1270 feet (2140.9 ksf, and 1843.0 ksf) for Chum flow requirement. In January through March, Coulee can draft below the computed variable Biological Rule Curve (fish vecc) to meet chum flow targets. After an initial run, Coulee's January through March outflows are subjectively smoothed to mimic in-season operations. The draft limits at Coulee for McNary flow targets are: 1225 ft (420.5 ksf) in April 30, 1240 ft (843.9 ksf) in May, and 1285 ft (2408.2 ksf) in June – July. These are soft constraints and can be violated in some years in order to better reflect in-season management decisions. Coulee has a maximum elevation of 1287 ft (2490.7 ksf) in November - May, 1288ft (2531.9 ksf) in June - August, 1285 ft (2408.2 ksf) in September, and 1288 ft (2531.9 ksf) in October. When the July 1 April-August volume runoff at The Dalles is greater than 92 MAF, Grand Coulee is operated as low as 1282.0 feet (2291.9 ksf) in August 15. and 1280.0 ft (2216.4 ksf) when the July 1 April-August volume runoff at The Dalles is 92 MAF or less to meet the McNary flow augmentation targets, When the July 1 April-August volume runoff at The Dalles is greater than 92 MAF, Grand Coulee is operated as low as 1280.0 feet (2216.4 ksf) in August 31, and 1278 ft (2140.9 ksf) when the July 1 April-August volume runoff at The Dalles is 92 MAF or less to meet the McNary flow augmentation targets. At-site minimum month average turbine flow is 50,000 cfs for peaking purposes. The Bureau will perform maintenance on the spillway drumgates from March 15 to as late as May 15 to meet the following criteria: at least one year of every three, two years of every five and three years of every seven. For modeling, the maintenance requires a maximum Lake Roosevelt elevation of 1277.5 feet (2121.1 ksf) at the end of February (so as not to exceed the 1.5 ft/day draft limit in drafting to 1255 feet (1318.5 ksf) by March 15, and 1255 feet (1318.4 ksf) on March 31, April 15 and April 30.
- **Columbia Basin Irrigation Project Pumping (Banks Lake)** is captured through the PNCA data submittal estimates of pumping, which are based on the average of the past five years actual pumping and include the equivalent of 5 feet (65.5 ksf) flow augmentation in August and the associated increase in pumping the following March-May period to return those 5 feet to Banks Lake. In years when this flow augmentation is not needed to meet the McNary flow augmentation target of 200 kcfs, the pumping is increased by the equivalent of 5 feet in August and the following year's March-May pumping is decreased. Additionally, the Washington Columbia River Water Management Program (WCRWMP) is included in the OPER step. The WCRWMP includes the following:
 - Grand Coulee Summer Draft
 - ◇ In years when the July 1 April-August volume forecast for The Dalles is less than 92 MAF (50th percentile), the project should not draft below an August 31 draft limit of 1278.0 ft. (2140.9 ksf).
 - ◇ In years when the July 1 April-August volume forecast for The Dalles is greater than 92MAF (50th percentile), the project should not draft below an August 31 draft limit of 1280.0 ft. (2216.3 ksf).

- ◇ Also for years with less than 57,582 kaf (lower 5th percentile), release 132 Kaf from GCL for the Washington State's Columbia River Partnership (WSCRCP). 47 kaf is for fish flow enhancement, 25 kaf is for municipal used in Tri-Cities, of which about 60% may return promptly to the river in the McNary pool as treated municipal effluent, and 33 kaf would support irrigation in MCN and JDA.
- ◇ And for years with greater than 57,582 kaf (lower 5th percentile) release 82 kaf from GCL for the WSCRCP. 30 kaf is for fish flow enhancement and 22 kaf is for municipal used in Tri-Cities, of which about 60% may return promptly to the river in the McNary pool as treated municipal effluent.
- Columbia Basin Project Pumping Increase
 - ◇ In all water years, reduce GCL inflows to reflect a pumping increase of 30 kaf in July and August (244 cfs July 1 – August 31). Also account for the increased pumping load (~7 aMW July 1 – August 31).
- McNary Inflow Reductions
 - ◇ In all water years, reduce McNary inflows to reflect an increase of 25 kaf to the Tri-Cities municipal water supply in July and August (81 cfs July 1 – August 31 assuming 60% effluent return).
 - ◇ In years with less than 57,582 kaf (lower 5th percentile), reduce McNary inflows to reflect 16.5 kaf increased irrigation support in July and August (134 cfs July 1 – August 31).
- John Day Inflow Reductions
 - ◇ In years with less than 57,582 kaf (lower 5th percentile), reduce John Day inflows to reflect 16.5 kaf increased irrigation support in July and August (134 cfs July 1 – August 31).
- **Dworshak:** Minimum flow will be 1,300 cfs in all periods. From January through June, Dworshak operates on or near flood control. By July 31, it operates to the midpoint of the straight line drawn from the end of June reservoir content to the end of August flow augmentation draft limit of 497.0 ksf (1535 ft.). Operating to the July 31 point will have highest priority unless outflow would exceed 14,000 cfs. In August, draft to 497.0 ksf as a target with highest priority - to be ignored only if August outflow would exceed 14,000 cfs. Dworshak will be drafted in September without exceeding a maximum outflow of 7,650 cfs and the draft limit of 1520 ft (395.8 ksf). (7,650 cfs derived by assuming the project discharge is 14 kcfs in the first half of the month and 1,300 cfs in the second half of the month).
- **Bonneville:** The corner collector is assumed to be operated throughout March and April, in addition to the time included in the AER step.
- **Juvenile Bypass Spill and Gas Caps:** See the following tables. Forecasts of less than 12.8 MAF April-June at Lower Granite are used to forecast when flows are less than 65kcfs. . Forecasts of 14.6 MAF April-June at Lower Granite are used to forecast when flows are greater than 80 kcfs.

08RateCase10 spill criteria for > 65kcfs years									
	MAR	AP1	AP2	MAY	JUN	JUL	AG1	AG2	Modeling Cap (cfs) 120%TDG spring/summer
LWG - (cfs)		17,333	20,000	10,968	18,267	18,000	6,000	0	40,000
LGS - (cfs)		0.220	0.300	0.165	0.300	0.300	0.160	0	27,000
LMN - (cfs)		13,800	23,000	12,613	17,800	17,000	12,467	0	23,000
IHR(a) - (% of outflow)		0.180	0.300	0.300	0.300	0.300	0.260	0	97,000
MCN - (% of outflow)		0.160	0.400	0.400	0.500	0.600	0.600	0.600	121,000spring 138,000Jul 148,000Aug
JDA - (% of outflow)		0.120	0.337	0.350	0.350	0.332	0.300	0.300	94,000
TDA - (% of outflow)		0.160	0.400	0.400	0.400	0.400	0.400	0.400	128,000
BON - (cfs)	6,452 or 9,677	40,000	100,000	100,000	94,104	92,854	94,031	97,313	96,000spring 114,000Jul 138,000Aug

SPILL CRITERIA FOR 08RateCase10 STUDY					
	Spill	Min Turb	Days	Hour Ending	Notes
LWG	20 kcfs 18 kcfs	11.5 kcfs	Apr 3 - May 6, May 21 - Jun 4; Jun 5 - Aug 5	All hours	See spring transport criteria. No spring spill in less-than-65kcfs years.
LGS	30% flow	11.5 kcfs	Apr 5 - May 6, May 21 - Aug 8	All hours	
LMN	gas cap 17 kcfs	11.5 kcfs	Apr 7 - May 6, May 21 - Jun 4; Jun 5 - Aug 11	All hours	
IHR	30% flow	9.5 kcfs	Apr 7 - Jun 15	All hours	
	30% flow		Jun 16 - Aug 13	All hours	
MCN	40% flow	50 kcfs	April 10 - Jun 15	All hours	
	60% flow		Jun 16 - Aug 31	All hours	
JDA	0/60% flow	50 kcfs	Apr 10 - 19	12 hours	
	30% vs 40% flow		Apr 20 - Jul 20	All hours	
	30% flow		Jul 21 - Aug 31	All hours	
TDA	40% flow	50 kcfs	Apr 10 - Aug 31	All hours	
BON	50 kcfs or 75 kcfs	30 kcfs	March: 4 days	All hours	Jun1-30 day hrs are 0430-2130. Jul1-31 day hrs are 0430-2200. Aug1-15 day hrs are 0500-2145. Aug16-31 day hrs are 0500-2030.
	100 kcfs		Apr 10 - Jun 15	All hours	
	85 kcfs day / gas cap night		Jun 16 - Jul 31	All hours. Day/night spill hours vary.	
	75 kcfs day / gas cap night		Aug 1 - Aug 31		

Summary of spring spill & transport assumptions for the final BiOp.

Lower Granite Dam				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65	no spill	no spill	no spill	spill Jun5-30
Seasonal Average Flows > 65	spill Apr3-15	spill Apr16-30	spill May1-6,21-31	spill Jun5-30
Little Goose Dam				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65	no spill	no spill	no spill	spill Jun5-30
Seasonal Average Flows > 65	spill Apr5-15	spill Apr16-30	spill May1-6,21-31	spill Jun5-30
Lower Monumental Dam				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65	no spill	no spill	no spill	spill Jun5-30
Seasonal Average Flows > 65	spill Apr7-15	spill Apr16-30	spill May1-6,21-31	spill Jun5-30

* Fed agreement that summer spill starts June 5th on average based on fish passage criteria

- **Overgeneration Spill:** Spill up to TDG gas cap in the order listed below to avoid generation levels that exceed the secondary market limit.

	120%	125%	130%	135%
MCN:	138 kcfs	230 kcfs	310 kcfs	450 kcfs
TDA:	128 kcfs	250 kcfs	360 kcfs	600 kcfs
JDA:	94 kcfs	240 kcfs	450 kcfs	600 kcfs
BON:	96/114/138 kcfs ¹	150 kcfs	225 kcfs	270 kcfs
LWG:	40 kcfs	70 kcfs	90 kcfs	150 kcfs
LGS:	27 kcfs	80 kcfs	150 kcfs	250 kcfs
LMN:	23 kcfs	95 kcfs	180 kcfs	250 kcfs
IHR:	97 kcfs	125 kcfs	180 kcfs	240 kcfs
CHJ:	150 kcfs	200 kcfs	300 kcfs	450 kcfs
GCL ² :	30 kcfs	75 kcfs	120 kcfs	170 kcfs
GCL ³ :	10 kcfs	20 kcfs	35 kcfs	55 kcfs

¹ 96 kcfs in all months except 114 kcfs in July and 138 kcfs in August and September.

² During all periods except May.

³ During May, when GCL is more likely below elevation 1260, the spillway crest elevation, and the regulating outlets must be used to spill.

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BONNEVILLE POWER ADMINISTRATION

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