FINAL LICENSE APPLICATION
VOLUME I: EXHIBITS A-D

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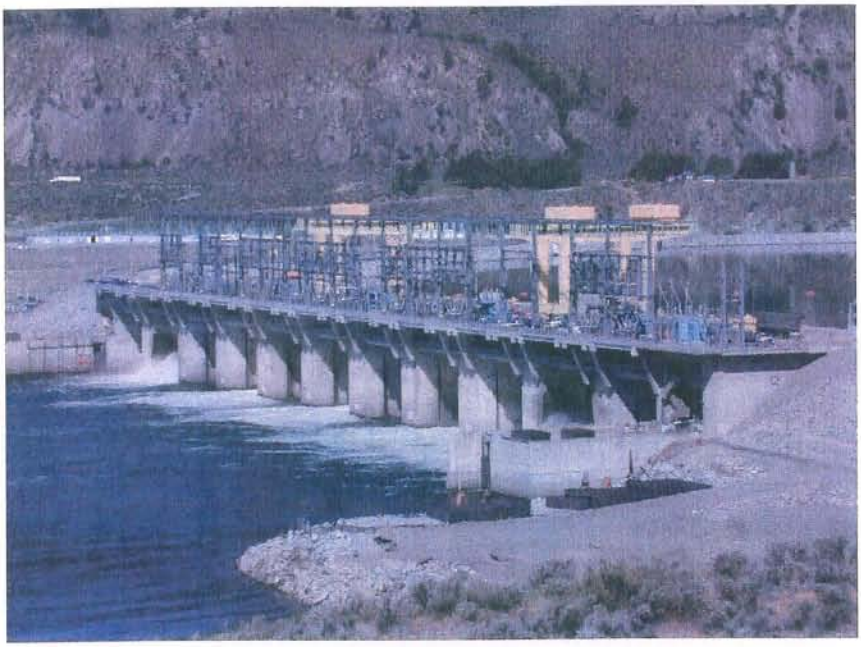
EXECUTIVE SUMMARY
INITIAL STATEMENT
EXHIBIT A – PROJECT DESCRIPTION
EXHIBIT B – PROJECT OPERATIONS AND RESOURCE UTILIZATION
EXHIBIT C – CONSTRUCTION HISTORY
EXHIBIT D – STATEMENT OF COSTS AND FINANCING

WELLS HYDROELECTRIC PROJECT
FERC PROJECT NO. 2149-131

SECURITY LEVEL: PUBLIC



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May 2010

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May 27, 2010

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Subject: **Wells Hydroelectric Project No. 2149-131**
Final License Application

Dear Secretary Bose:

In accordance with 18 C.F.R. § 5.18, the Public Utility District No. 1 of Douglas County, Washington (Douglas PUD), licensee for the Wells Hydroelectric Project (Wells Project), hereby submits for filing one paper original and eight compact disk copies of its Final License Application (FLA) for the Wells Project.

The FLA consists of three volumes containing an Executive Summary, an Initial Statement and eight exhibits lettered A through H. Volume I contains the Executive Summary and Initial Statement, Exhibit A (Project Description), Exhibit B (Project Operations and Resource Utilization), Exhibit C (Construction History) and Exhibit D (Statement of Costs and Financing). Volume II contains Exhibit E (Environmental Exhibit). Volume III contains Exhibit F (General Design Drawings), Exhibit G (Project Maps) and Exhibit H (Plans and Ability of Applicant to Operate the Project).

Exhibit E is an Applicant-prepared draft Environmental Assessment (EA) that includes a detailed analysis of the Applicant's Proposed Action and the No Action Alternative. Exhibit E includes 13 supporting documents that contain Douglas PUD's proposed environmental measures and records of consultation for the FLA. Appendix E-1 of Exhibit E is the Anadromous Fish Agreement and Habitat Conservation Plan. Appendix E-2 contains the Aquatic Settlement Agreement and six associated aquatic resource management plans. Appendices E-3 through E-6 contain the Wildlife and Botanical Management Plan, Historic Properties Management Plan, Recreation Management Plan and Avian Protection Plan, respectively. Appendix E-7 contains the draft Biological Assessment developed by the Applicant in consultation with the United States Fish and Wildlife Service and the National Marine Fisheries Service. Appendix E-8 contains the Consultation Records for the Wells FLA, Section 7 of the Endangered Species Act

and Section 106 of the National Historic Preservation Act. Appendix E-9 contains the Upper Columbia River Spring Chinook Hatchery Genetics Management Plan. Appendix E-10 contains the Comprehensive List of Plant Species Occurring in the Wells Project. Appendix E-11 contains the Off-License Settlement Agreement with the Washington State Department of Fish and Wildlife. Appendix E-12 contains the relicensing agreements with the cities of Bridgeport, Pateros and Brewster. Appendix E-13 contains Douglas PUD's proposed Land Use Policy for the Wells Project.

The FLA is the culmination of 17 years of relicensing-related work by stakeholders and Douglas PUD. Work on the Anadromous Fish Agreements and Habitat Conservation Plan (Wells HCP), specifically developed to satisfy the anticipated relicensing requirements for anadromous salmonids, was initiated in 1993 and was approved by FERC in 2004. Negotiations related to settling all remaining aquatic resource issues started in 2005, prior to the filing of the Notice of Intent and Pre-Application Document in December 2006. These negotiations led to the execution of the Aquatic Settlement Agreement (ASA) in early 2009. The measures in the ASA are proposed to satisfy the anticipated relicensing requirements for aquatic resources other than anadromous salmonids.

In addition to the settlement agreements for all aquatic resource issues, as provided by the Wells HCP and the ASA, Douglas PUD has also resolved stakeholder issues related to terrestrial, recreation and cultural resources through the collaborative development of five management plans and four additional settlement agreements. Management plans developed to address terrestrial, recreation and cultural resources include the Wildlife and Botanical Resources Management Plan, Avian Protection Plan, Recreation Management Plan, Historic Properties Management Plan and Douglas PUD's Land Use Policy. Settlement agreements include relicensing agreements with the cities of Bridgeport, Pateros and Brewster related to project related recreation facilities and an Off-License Settlement Agreement with the Washington State Department of Fish and Wildlife for wildlife and resident fish enhancement within and outside the Project Boundary.

Douglas PUD's FLA proposes extensive environmental measures with an estimated cost exceeding $643 million during a 50-year license term. These measures were developed through the use of extensive stakeholder outreach and early stakeholder approval of study plans, management plans and settlement agreements. Collectively these measures address all of the resource issues related to the Wells Project and fully support the issuance of a new 50-year license. In fact, support for a 50-year license term is a central element of the five settlement agreements executed by Douglas PUD and various stakeholders. Agencies, tribes and stakeholders who have signed these settlement agreements with Douglas PUD include the United States Fish and Wildlife Service, United States Bureau of Land Management, Washington State Department of Ecology, Washington State Department of Fish and Wildlife, the Confederated Tribes of the Colville Reservation, the Confederated Tribes and Bands of the Yakama Nation and the cities of Bridgeport, Pateros and Brewster.

The Historic Properties Management Plan in Appendix E-4 of Exhibit E of the FLA contains confidential cultural information, the disclosure of which would create a risk of harm, theft or destruction of archeological or native American cultural resources and therefore qualifies as

privileged information under FERC regulations, 18 C.F.R. §§ 5.6, 388.112. Accordingly, one original of the Historic Properties Management Plan has been marked as Privileged Information in accordance with instructions issued by the Secretary and is being filed separately from the public volume of the FLA. Douglas PUD requests that the Historic Properties Management Plan be maintained in a non-public file and withheld from public disclosure in accordance with applicable regulations.

The Design Drawings in Exhibit F of the FLA contain specific engineering and design information that relates to the generation and transmission of electric energy and qualify as Critical Energy Infrastructure Information (CEII) pursuant to FERC regulations, 18 C.F.R § 388.113. Accordingly, an original and two copies of Exhibit F have been marked as CEII in accordance with instructions issued by the Secretary and are being filed separately from the public volume of the FLA. Douglas PUD requests that Exhibit F of the FLA be maintained in a non-public file and withheld from public disclosure in accordance with applicable regulations.

Public copies of the FLA are concurrently being distributed to all entities listed on the attached Relicensing Distribution List in accordance with the Communication Protocol set forth in section 2.3 of the Pre-Application Document for the Wells Project.

If you have any questions or require further information, please feel free to contact me at (509) 881-2208 or sbickford@dcpud.org.

Sincerely,

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Natural Resources Supervisor

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WELLS HYDROELECTRIC PROJECT
FERC No. 2149-131

FINAL LICENSE APPLICATION

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VOLUME I

VOLUME II

VOLUME III

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ACRONYM LIST

ABB .....Asea Brown Boveri Ltd
ac-ft .....acre-feet
ACHP .....Advisory Council on Historic Preservation
ADA .....Americans with Disabilities Act
ANS.....Aquatic nuisance species
ANSC .....Aquatic Nuisance Species Committee
APE .....Area of potential effects
APEA .....Applicant-Prepared Environmental Assessment
APLIC .....Avian Power Line Interaction Committee
APP .....Avian Protection Plan
ANSMP.....Aquatic Nuisance Species Management Plan
ASA.....Aquatic Settlement Agreement
AWS.....Auxiliary water supply
BA .....Biological Assessment
BIA.....Bureau of Indian Affairs
BLM .....Bureau of Land Management
BMPs.....Best Management Practices
BO .....Biological Opinion
BOR .....Bureau of Reclamation
BPA.....Bonneville Power Administration
BTMP.....Bull Trout Management Plan
BTMMP .....Bull Trout Monitoring and Management Plan
CBE.....Columbia Basin Environmental
CBFWA .....Columbia Basin Fish and Wildlife Authority
CBIP.....Columbia Basin Irrigation Project
CCT.....Confederated Tribes of the Colville Reservation
CEII.....Critical Energy Infrastructure Information
CFD.....Computational Fluid Dynamics
CFR.....Code of Federal Regulations
cfs.....cubic feet per second
Chelan PUD .....Public Utility District No. 1 of Chelan County
cm.....centimeter

COE.....U.S. Army Corps of Engineers

coho.....hatchery origin coho salmon

Council Program .....Columbia River Basin Fish and Wildlife Program

CPUC .....California Public Utilities Commission

CSR-SRI .....Columbia and Snake River Spill Response Initiative

CTEC .....Colville Tribal Enterprise Corporation

CUR .....Confederated Tribes of the Umatilla Indian Reservation

CWA .....Clean Water Act

DAHP/SHPO .....Washington Department of Archaeology and Historic Preservation/State Historic Preservation Officer

DDT .....Dichloro-Diphenyl-Trichloroethane

DEA .....Draft Environmental Assessment

DE&S.....Duke Engineering & Services, Inc.

DLA .....Draft License Application

DNR .....Washington Department of Natural Resources

DO.....Dissolved oxygen

DOE .....Department of Energy

DOI .....Department of Interior

Douglas PUD .....Public Utility District No. 1 of Douglas County

DPS .....Distinct population segment

DSSMP .....Dam Safety Surveillance and Monitoring Plan

DSSMR.....Dam Safety Surveillance and Monitoring Reports

DTA .....Devine Tarbell & Associates, Inc.

EA .....Environmental Assessment

EAP.....Emergency Action Plan

Ecology .....Washington State Department of Ecology

EDAW.....EDAW, Inc.

EES .....EES Consulting, Inc.

EFH.....Essential Fish Habitat

EPA.....Environmental Protection Agency

ESA.....Endangered Species Act

ESU.....Evolutionarily Significant Unit

EWM.....Eurasian watermilfoil (*Myriophyllum spicatum*)

FCRPS.....Federal Columbia River Power System

FERC.....Federal Energy Regulatory Commission
FPA .....Federal Power Act
FPC .....Federal Power Commission
GAP.....Gas Abatement Plan
GBT.....Gas Bubble Trauma
GCWT.....Greater Columbia Water Trail
GIS .....Geographic Information System
gpm .....gallons per minute
Grant PUD .....Public Utility District No. 2 of Grant County
HCA .....Mid-Columbia Hourly Coordination Agreement
HCP or Wells HCP .....Wells Anadromous Fish Agreement and Habitat Conservation Plan
HGMPs .....Hatchery and Genetic Management Plans
hp.....horsepower
HPMP.....Historic Properties Management Plan
IAC.....Interagency Committee
IGCC.....Integrated gasification combined-cycle
ILP.....Integrated Licensing Process
IRP .....Integrated Resource Plan
ITP.....Incidental Take Permit
ITS.....Incidental Take Statement
JBS .....Juvenile Bypass System
kcfs.....thousand cubic feet per second
km .....kilometer
kV.....kilovolt
kVA.....kilovolt-ampere
kW.....kilowatt
kWh.....kilowatt hour
MAF .....million acre-feet
mg/L.....milligrams per liter
MOA .....Memorandum of Agreement
MOU .....Memorandum of Understanding
MSL .....Mean Sea Level
MW .....megawatt
MWh .....megawatt-hours

NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NGOs	Non-governmental organizations
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NNI	No Net Impact
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPR	Non-power requirements
NPS	National Park Service
NRHP	National Register of Historic Places
NTUs	Nephelometric turbidity units
NWPP	Northwest Power Pool
NWPPC	Northwest Power and Conservation Planning Council
NWPPCA	Northwest Electric Power Planning and Conservation Act
ODFW	Oregon Department of Fish and Wildlife
Okanogan PUD	Public Utility District No. 1 of Okanogan County
O&M	Operation and maintenance
PA	Programmatic Agreement
PAD	Pre-Application Document
PCBs	Polychlorinated Biphenyls
PFMA	Potential Failure Mode Analysis
PGE	Portland General Electric
PIT	Passive integrated transponder
PLMP	Pacific Lamprey Management Plan
PM&E	Protection, mitigation, and enhancement measures
PNCA	Pacific Northwest Coordination Agreement
PNUCC	Pacific Northwest Utilities Conference Committee
Power Purchasers	Puget Sound Energy, Inc., Portland General Electric Company, PacifiCorp, and Avista Corporation
Project	Wells Hydroelectric Project
PSE	Puget Sound Energy, Inc.
PSMFC	Pacific States Marine Fisheries Commission
PSP	Proposed Study Plan

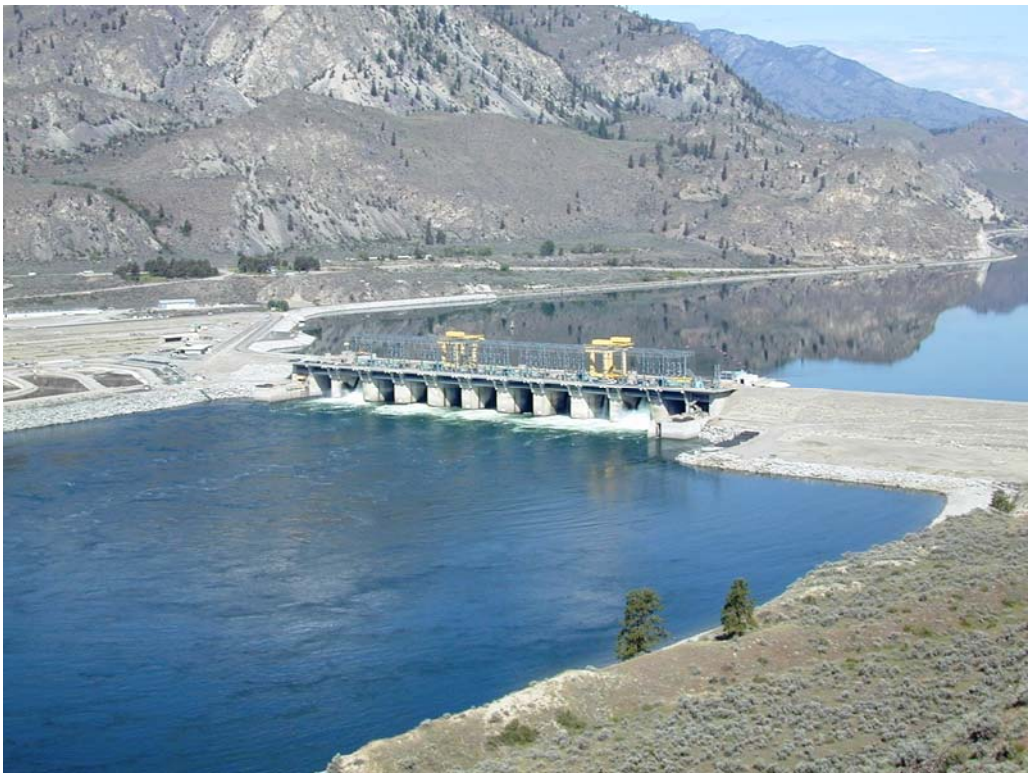
PUDs .....Public Utility Districts
RCO .....Recreation and Conservation Office
RCW .....Revised Code of Washington
RD .....Recreation days
RFMP .....Resident Fish Management Plan
RLF .....Reverse load factoring
RM .....River mile
RMP .....Recreation Management Plan
rpm .....revolutions per minute
RSP .....Revised Study Plan
RTE .....Rare, threatened, and endangered
RWG .....Resource Work Group
SCORP .....State Comprehensive Outdoor Recreation Planning Document
SD1 .....Scoping Document 1
SD2 .....Scoping Document 2
SFA .....Sustainable Fisheries Act
SHPO .....State Historic Preservation Officer
SMP .....Shoreline Management Plan
sockeye .....Okanogan River sockeye salmon
SPCC .....Spill Prevention, Containment, and Countermeasures
spring Chinook .....Upper Columbia River spring-run Chinook salmon
steelhead .....Upper Columbia River steelhead
summer/fall Chinook .....Upper Columbia River summer/fall-run Chinook salmon
SWG .....Settlement Work Group
TCP .....Traditional Cultural Properties
TDG .....Total dissolved gas
THPO .....Tribal Historic Preservation Officer
TMDL .....Total maximum daily load
TSI .....Trophic Status Index
µg/kg .....Micrograms per kilogram
µg/L .....Micrograms per liter
UCR .....Upper Columbia River
UCSRB .....Upper Columbia Salmon Recovery Board
UCSRP .....Upper Columbia Salmon Recovery Plan

U.S. .....United States
USDA.....U.S. Department of Agriculture
USFS.....USDA Forest Service
USGS .....U.S. Geological Survey
USFWS .....U.S. Fish and Wildlife Service
V.....volt
WBMP .....Wildlife and Botanical Management Plan
WBTMMP .....Wells Bull Trout Monitoring and Management Plan
WDFW.....Washington Department of Fish and Wildlife
WDNR .....Washington Department of Natural Resources
WDOH .....Washington Department of Health
WECC.....Western Electricity Coordinating Council
WNWCB.....Washington State Noxious Weed Control Board
WQAP.....Water Quality Attainment Plan
WQC .....Clean Water Act Section 401 Water Quality Certificate
WQMP .....Water Quality Management Plan
WQS.....Water quality standards
WSMP.....White Sturgeon Management Plan
WWA .....Wells Wildlife Area
YN.....Confederated Tribes and Bands of the Yakama Nation

WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXECUTIVE SUMMARY



Prepared by:
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May 2010

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

Public Utility District No. 1 of Douglas County (Douglas PUD) is the owner, operator and licensee of the 774.3 megawatt (MW) Wells Hydroelectric Project (Wells Project or Project), located at river mile 515.6 on the Columbia River in central Washington. Douglas PUD's current Federal Energy Regulatory Commission (FERC) license expires on May 31, 2012. Douglas PUD has prepared this application for a new license in accordance with the FERC's Integrated Licensing Process (ILP) described in the Code of Federal Regulations at 18 CFR Part 5 (2009). Douglas PUD is requesting a new 50-year license for the Wells Project and has entered into numerous settlement agreements and detailed resource management plans, as described in this license application, which support and justify a 50-year license term.

2.0 THE WELLS HYDROELECTRIC PROJECT

The Wells Project is Douglas PUD's primary generating asset. Wells Dam, the principal component of the Wells Project, includes ten Kaplan turbine generating units with an installed nameplate capacity of 774.3 MW. The Wells Project is a run-of-river generating station with an average annual net generation of 4,077,400 megawatt hours (MWh).

The design of the Wells Project is unique in that the generating units, spillways, switchyard, and fish passage facilities are combined into a single structure referred to as a hydrocombine. The hydrocombine is 1,130 feet long and 168 feet wide with a top deck elevation of 795 feet above mean sea level (MSL). The Wells Project includes the Wells Fish Hatchery located immediately west of Wells Dam and two 230 kilovolt (kV) single-circuit transmission lines, which run 41 miles in length from Wells Dam to Douglas Switchyard near Rocky Reach Dam.

The Wells Reservoir is 29.5 miles long. The Methow and Okanogan rivers are tributaries of the Columbia River within the Wells Reservoir. The Wells Project Boundary extends approximately 1.5 miles up the Methow River and approximately 15.5 miles up the Okanogan River. The normal maximum surface area of the reservoir is 9,740 acres with a gross storage capacity of 331,200 acre-feet and usable storage of 97,985 acre-feet when the reservoir surface is at an elevation of 781 feet MSL, the normal maximum water surface elevation. The normal minimum elevation of the reservoir is 771 feet MSL.

3.0 PRE-ILP PROCESS

Starting in early 2005, prior to the initiation of the formal Wells ILP, Douglas PUD implemented an extensive stakeholder outreach and education program including the completion of 15 baseline studies, 31 stakeholder outreach meetings, and 28 Resource Work Group (RWG) meetings.

Baseline environmental studies conducted by Douglas PUD included the following 15 studies and assessments: (1) Aquatic Macroinvertebrate Inventory and RTE Assessment, (2) Bathymetric Mapping, (3) Bull Trout Monitoring Program, (4) Botanical Resources: Cover Type

Mapping, RTE Plant and Invasive Plant Species Surveys, (5) Effects of Water Level Fluctuations on Natural Resources within the Wells Project, (6) Limnological Investigation, (7) Macrophyte Identification and Distribution Study, (8) Recreation Visitor Use Assessment, (9) Temperature Monitoring, (10) Total Dissolved Gas (TDG) Study (2005), (11) Total Dissolved Gas Dynamic and Computational Fluid Dynamics Data Collection Study (2006), (12) White Sturgeon Population and Life-History Assessment, Wells Reservoir, (13) Wildlife Resources: Avian, Amphibian, Reptile, and Small Mammal Surveys and RTE Wildlife Surveys, (14) Transmission Corridor Botanical and Cover Type Mapping, and (15) Cultural Data Review for the Wells Project. The results of these studies were provided to stakeholders and included in the Pre-Application Document (PAD) which was filed on December 1, 2006.

In addition to conducting the 15 baseline studies, Douglas PUD hosted an introductory ILP workshop on October 18, 2005, more than a year in advance of the start of the formal ILP. The intent of the workshop was to introduce stakeholders to the ILP, provide stakeholders with information about the Wells Project and to encourage stakeholders to participate in four RWGs: Aquatic/Water Quality, Terrestrial, Cultural, and Recreation. A series of pre-filing RWG meetings and site tours began in November 2005 and ended in November 2006. Participants in the RWGs included various federal, state and local resource agencies, interested Indian tribes, and local government agencies.

The primary goals of the RWGs were to identify issues and potential study needs. This process provided stakeholders and Douglas PUD an opportunity to have an open dialogue about issues and concerns in advance of the rigorous timeline of the ILP. Through this process, each RWG cooperatively developed a list of Project-related issues and agreed-upon study plans.

4.0 RELICENSING PROCESS

Douglas PUD initiated the formal ILP by submitting the Notice of Intent to seek a new license for the Project and Pre-Application Document (PAD) to the FERC on December 1, 2006. The PAD included the 12 agreed-upon study plans developed within the RWGs.

Following the filing of the PAD, the FERC issued Scoping Document 1 (SD1) on January 29, 2007. FERC staff conducted the official site visit on February 27, 2007 and conducted public scoping meetings on February 28, 2007 in the City of East Wenatchee, Washington and the City of Brewster, Washington. On May 15, 2007, the FERC issued a Revised Scoping Document (SD2). The FERC issued an Addendum to SD2 on May 16, 2007. The scoping documents defined potential project effects, including direct, indirect and cumulative effects.

On May 16, 2007, Douglas PUD submitted a Proposed Study Plan (PSP) Document. The PSP Document consisted of Douglas PUD's Proposed Study Plans, Responses to Stakeholder Study Requests and a schedule for conducting the Study Plan Meeting. The Study Plan Meeting was conducted on June 14, 2007. The purpose of the Study Plan Meeting was to provide stakeholders with an opportunity to review and comment on Douglas PUD's PSP Document, to answer questions related to stakeholder study requests and to attempt to resolve any outstanding issues with respect to the PSP Document.

On September 14, 2007, Douglas PUD submitted a Revised Study Plan (RSP) Document. The RSP Document consisted of a summary of each of Douglas PUD's revised study plans and a response to stakeholder comments on the PSP Document.

On October 11, 2007, the FERC issued its Study Plan Determination based on review of the RSP Document and comments from stakeholders. FERC's Study Plan Determination required Douglas PUD to complete 10 of the 12 studies included in its RSP Document. Douglas PUD opted to complete all 12 studies to better prepare for the 401 Water Quality Certification process conducted by the Washington State Department of Ecology and to fulfill its commitment to the RWGs, which collaboratively developed the 12 agreed-upon study plans with Douglas PUD.

On October 15, 2008, Douglas PUD filed with the FERC both a public and non-public version of the Initial Study Report (ISR) Document for the Wells Project. The ISR Document included the following 12 studies and assessments: (1) Cultural Resources Investigation, (2) Public Access Study, (3) Recreation Needs Analysis, (4) Piscivorous Wildlife Control Study, (5) Transmission Line Wildlife and Botanical Study, (6) Juvenile Lamprey Study, (7) Adult Lamprey Passage Study, (8) Total Dissolved Gas Investigation , (9) Water Temperature Study, (10) Okanogan Toxins Study, (11) DO, pH and Turbidity Study (not required by the FERC) and (12) Lamprey Spawning Assessment (not required by the FERC). On November 24, 2008, Douglas PUD filed a letter correcting a water temperature figure within the original ISR Document. On December 2, 2008, Douglas PUD filed the final Traditional Cultural Property Study for the Wells Project, which was prepared by the Confederated Tribes of the Colville Reservation under a contract with Douglas PUD.

The deadline for stakeholder comment on the ISR Document was December 15, 2008 pursuant to the approved Process Plan and Schedule for the Wells Project. Comments were filed by the City of Pateros on November 7, 2008 and by the City of Brewster on December 5, 2008.

On January 14, 2009, Douglas PUD filed a letter containing its responses to the comments on the ISR Document from the cities. In the same letter, Douglas PUD proposed revisions to the schedule for the Wells ILP. On February 4, 2009, the FERC issued a determination on the requests for modification to the Wells Study Plan and on Douglas PUD's proposed revisions to the schedule. The FERC concluded that there was no need to modify the Wells Study Plan. The FERC also approved Douglas PUD's proposed modifications to the Wells ILP schedule.

On April 15, 2009, Douglas PUD filed its Updated Study Report (USR) Document and its Notice of Intent to file a draft license application for the Wells Project. The USR Document provided the final study reports for those studies that were still in progress when the ISR Document was filed in October 2008. The final reports contained within the USR Document include the 2008 Adult Lamprey Passage Study, TDG Investigation, the DO, pH and Turbidity Study and the final Transmission Line Wildlife and Botanical Study. The USR Meeting was conducted on April 30, 2009 and no comments were received on any of the reports or meeting minutes. The filing of the USR Document concluded the study phase of the Wells ILP.

On December 18, 2009, Douglas PUD filed with the FERC the Draft License Application (DLA). Comments on the DLA were received from Ecology and the FERC. Douglas PUD has addressed the comments provided by stakeholders in the appropriate sections of this application.

5.0 FINAL LICENSE APPLICATION

The Final License Application (FLA) is the culmination of 17 years of relicensing-related work by stakeholders and Douglas PUD. Through the use of extensive stakeholder outreach and early agreement on studies, management plans and settlement agreements, Douglas PUD's FLA proposes to undertake environmental measures that fully address all of the resource issues associated with the operation of the Wells Project.

Work on the Anadromous Fish Agreements and Habitat Conservation Plan (Wells HCP), which was specifically developed to satisfy the anticipated relicensing requirements for anadromous salmonids, was initiated in 1993 and was approved by the FERC in 2004. Negotiations related to settling all remaining aquatic resource issues started in 2005, prior to the filing of the Notice of Intent and Pre-Application Document in December 2006. These negotiations led to the execution of the Aquatic Settlement Agreement in 2009. The measures in the Aquatic Settlement Agreement are proposed to satisfy the anticipated relicensing requirements for aquatic resources other than anadromous salmonids.

In addition to the settlement agreements for all aquatic resource issues, as provided by the Wells HCP and the Aquatic Settlement Agreement, Douglas PUD has also resolved stakeholder issues related to terrestrial, recreation and cultural resources through the collaborative development of five management plans and four settlement agreements. Management plans developed to address terrestrial, recreation and cultural resources include the Wildlife and Botanical Management Plan, Avian Protection Plan, Recreation Management Plan, Historic Properties Management Plan and Douglas PUD's Land Use Policy. Settlement agreements that address these issues include relicensing agreements with the cities of Bridgeport, Pateros and Brewster and an Off-License Settlement Agreement with the Washington State Department of Fish and Wildlife for wildlife and resident fish enhancement within and outside the Project.

In total, these agreements and management plans are proposed to resolve all outstanding resource issues associated with relicensing the Wells Project by a broad group of federal, state, tribal and local-government stakeholders. In exchange for the substantial commitments made by Douglas PUD to resolve these issues, the parties to the five relicensing settlement agreements have explicitly committed to support the issuance of a new license with a 50-year license term.

The FLA consists of three volumes containing an Executive Summary, an Initial Statement and eight exhibits lettered A through H. Volume I contains the Executive Summary and Initial Statement, Exhibit A (Project Description), Exhibit B (Project Operations and Resource Utilization), Exhibit C (Construction History) and Exhibit D (Statement of Costs and Financing). Volume II contains Exhibit E (Environmental Exhibit). Volume III contains Exhibit F (General Design Drawings), Exhibit G (Project Maps) and Exhibit H (Plans and Ability of Applicant to Operate the Project).

This FLA contains a detailed assessment of the effects of the Wells Project on the environment of the Columbia, Okanogan, and Methow rivers. All Project effects are enumerated and appropriate long-term measures are developed to address these effects. Stakeholders have actively participated in every aspect of this process and broad agreement has been reached. This FLA contains the record of this process and these agreements.

6.0 CONCLUSION

The Wells Project generates over 4 billion kWh per year of renewable electricity. In addition to providing clean, efficient, reliable, and cost-effective hydroelectric power to over 18,000 local customer accounts in Douglas County, the Project provides significant benefits to the local economies in Douglas, Okanogan, and Chelan counties and throughout the Pacific Northwest. The Project currently serves the greater Pacific Northwest region as 4.5% of Project output is provided to the Confederated Tribes of the Colville Reservation and 62% or the remaining Project output is provided to Puget Sound Energy, Inc. (PSE), Portland General Electric Company (PGE), PacifiCorp and Avista Corporation (Avista).

Douglas PUD's FLA commits Douglas PUD to the expenditure of significant funds to implement six settlement agreements and 12 resource management plans over the proposed 50-year license term. These settlement agreements and management plans require the implementation of over 130 new environmental measures at an estimated cost of $643 million.

Douglas PUD has worked with federal, state and tribal entities to develop the first hydropower HCP in the nation for salmon and steelhead. During the term of the new license, implementing the Wells HCP will require the expenditure of over $550 million in order to meet the Wells HCP goal of no net impact on salmon and steelhead populations associated with the Wells Project. To achieve this goal, a combination of juvenile and adult fish passage measures are proposed at the Project as well as off-site hatchery programs and evaluations, and significant investments in habitat restoration work in tributary streams upstream of Wells Dam. The Wells HCP also requires extensive passage and survival studies, predator control programs and the continued implementation of a flow management program in Canada to enhance Okanogan sockeye. Douglas PUD's HCP commitments increased in 2010 following the required development of a Hatchery Genetic Management Plan (HGMP) for Upper Columbia River (UCR) spring Chinook. The spring Chinook HGMP, required by the National Marine Fisheries Service, proposes to increase the hatchery monitoring and evaluation programs and includes requirements to make upgrades to Douglas PUD's existing hatchery infrastructure. The National Marine Fisheries Service is also requiring Douglas PUD to develop an HGMP for UCR steelhead. The proposed steelhead HGMP is also expected to result in additional hatchery related expenditures.

Parties to the Wells HCP include the National Marine Fisheries Service, United States Fish and Wildlife Service, Washington State Department of Fish and Wildlife, Confederated Tribes of the Colville Reservation, Confederated Tribes and Bands of the Yakama Nation, Douglas PUD and the power purchasers for the Wells Project.

In 2009, as part of the Wells ILP, Douglas PUD also executed an Aquatic Settlement Agreement that provides extensive protection, mitigation and enhancement measures associated with

populations of white sturgeon, bull trout, Pacific lamprey, and native resident fish species. The Agreement also includes programs intended to reduce the threat of aquatic nuisance species and ensures compliance with state water quality standards. During the term of the new license, implementation of the Aquatic Settlement Agreement is anticipated to require the expenditure of over $55 million. Upon issuance of the new license, the Aquatic Settlement Agreement is designed to provide 50 years of protection, mitigation and enhancement measures for aquatic resources associated with the Wells Project. Parties to the Aquatic Settlement Agreement include the United States Fish and Wildlife Service, United States Bureau of Land Management, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, Confederated Tribes of the Colville Reservation, Confederated Tribes and Bands of the Yakama Nation, and Douglas PUD.

In addition to the Wells HCP and Aquatic Settlement Agreement, Douglas PUD is also proposing other significant environmental protection and recreation enhancement measures that will benefit resources and communities affected by the Project over the proposed 50-year license term. These proposed measures will enhance the Project environment. Measures proposed for the protection and enhancement of fish, wildlife, recreation, and cultural resources would also have a positive effect on local and regional socioeconomic conditions by providing jobs and increasing recreation opportunities and tourism. Douglas PUD estimates the costs of the proposed measures associated with implementation of the Wildlife and Botanical, Avian Protection, Historic Properties, and Recreation management plans will be over $38 million during the proposed 50-year license term.

Douglas PUD and stakeholders have executed five separate settlement agreements, all of which explicitly support a 50-year license term for the Wells Project. Stakeholders that have executed agreements supporting a 50-year license term include the United States Fish and Wildlife Service, United States Bureau of Land Management, Washington State Department of Fish and Wildlife, Washington State Department of Ecology, Confederated Tribes of the Colville Reservation, Confederated Tribes and Bands of the Yakama Nation and the cities of Pateros, Brewster and Bridgeport. Stakeholders have entered into these agreements in order to secure the long-term benefits of the Wells Project and the long-term commitment of Douglas PUD to environmental protection and stewardship. Douglas PUD has entered into these agreements to secure the support of a broad group of stakeholders for a 50-year license term, which is desirable and advantageous to finance the investment of over $2.9 billion in future Project costs, including over $643 million for new environmental measures. In view of the extensive environmental measures proposed in the FLA, a 50-year license term for the Wells Project is fully consistent with established FERC policy.

WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

INITIAL STATEMENT

May 2010

Prepared by:
Public Utility District No. 1 of Douglas County
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www.douglaspud.org/relicensing

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INITIAL STATEMENT

Before the Federal Energy Regulatory Commission

Application for New License for Major Project-Existing Dam

1.0 APPLICANT

Public Utility District No. 1 of Douglas County, Washington (Douglas PUD or Applicant) applies to the Federal Energy Regulatory Commission (FERC) for a new license for the existing 774.3 megawatt (MW) Wells Hydroelectric Project No. 2149 (Project), as described in the attached Exhibits.

2.0 LOCATION OF THE PROJECT

The location of the Project is:

State:	Washington
Counties:	Douglas, Okanogan, and Chelan counties
Township or nearby town:	Pateros, Brewster, Bridgeport
Stream or other body of water:	Columbia River

3.0 LICENSEE'S NAME, BUSINESS ADDRESS AND TELEPHONE NUMBER

The exact name and business address of the Applicant are:

Public Utility District No. 1 of Douglas County, Washington
1151 Valley Mall Parkway
East Wenatchee, WA 98802
(509) 884-7191

The exact name, business address and telephone number of each person authorized to act as an agent for this application are:

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General Manager
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, WA 98802

Shane A. Bickford (509) 881-2208
Natural Resources Supervisor
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, WA 98802

4.0 LICENSEE'S ORGANIZATIONAL STATUS

Douglas PUD is a municipal corporation of Washington State, established in 1936 pursuant to the Revised Code of Washington (RCW) 54.08.010, and is claiming preference under Section 7(a) of the Federal Power Act (FPA).

5.0 PERTINENT STATUTORY AND REGULATORY REQUIREMENTS OF WASHINGTON STATE

The relevant statutory and regulatory requirements of Washington State are those related to the use and occupation of the bed and banks of the river, the appropriation, diversion and use of water for power purposes, the right to engage in the business of developing, transmitting and distributing power, and any other business necessary to accomplish the purposes of the license under the FPA. Table 5.0-1 lists the relevant statutes and regulations.

Table 5.0-1 Relevant permits, approvals, and regulatory requirements of Washington State.

Agency	Statute or Regulation	Permit or Approval	Status
Washington Department of Ecology	PL92-500, PL95-517, RCW 90.48, WAC 173-201, WAC 173-225	Water Quality Certification (Section 401 of Clean Water Act)	Request will be submitted within 60 days of FERC's issuance of the REA notice.
Washington Department of Ecology	RCW 90.03	Water Rights (Permits to Appropriate Public Waters)	Existing water rights are adequate to operate the Project as proposed in this application.
Washington Department of Ecology	RCW 90.16.050, RCW 90.16.060, RCW 90.16.090	Power Production License	In effect, license fee paid annually.

The steps which the Applicant has taken or plans to take to comply with each of the laws and/or regulations cited above are described below.

Under Section 401 of the Clean Water Act (CWA), the Project must receive certification (unless such certification requirement is waived) from the Washington Department of Ecology (Ecology), that the Project as herein proposed, will comply with applicable water quality standards of the state. The Applicant will apply for Section 401 Water Quality Certification (WQC) after the FERC issues a notice that the application is ready for environmental analysis, in accordance with Section 5.23 of the FERC regulations, 18 C.F.R. § 5.23 (2009).

Douglas PUD possesses all of the water rights required to operate the Project as proposed in this application. A detailed list of all water rights issued to the Project by Ecology can be found in Tables 3.3.2.1-4, 3.3.2.1-5 and 3.3.2.1-6 of the accompanying Exhibit E.

Douglas PUD pays an annual license fee to Ecology for the use of water for power development, pursuant to the fee schedule described in RCW 90.16.050.

6.0 OWNERSHIP OF EXISTING PROJECT FACILITIES

Douglas PUD owns all existing Project facilities and has the necessary right, title, and interest in lands and water to operate and maintain the Project.

7.0 PROPOSED NEW PROJECT FACILITIES

As part of its license proposal, Douglas PUD is proposing to implement over 130 new environmental measures at a cost of $643 million over a 50-year license term. Included in these new environmental measures is the construction of new hatchery and recreation facilities as described in Exhibit C.

8.0 COUNTIES, CITIES, AND INDIAN TRIBES AFFECTED BY THE PROJECT

Wells Dam is located within Douglas and Chelan counties. The Wells Reservoir is located in Douglas, Chelan, and Okanogan counties, and borders lands of the Colville Indian Reservation. The mailing addresses of the counties are:

Douglas County
P.O. Box 747
Waterville, WA 98858

Okanogan County
123 Fifth Avenue North
Okanogan, WA 98840

Chelan County
350 Orondo Avenue
Wenatchee, WA 98801

Approximately two miles of the Wells Reservoir is within Chelan County, but no communities in Chelan County are adjacent to the Project.

The cities of Pateros (population: 643; Okanogan County), Brewster (population: 2,149; Okanogan County), and Bridgeport (population 2,059; Douglas County) are the principal municipalities located immediately adjacent to the Wells Project (U.S. Census 2000).

No federal facilities are used by the Wells Project. The following irrigation districts own and/or operate facilities within the Wells Project:

Brewster Flat Irrigation
94 C Mountain View Drive
Brewster, WA 98812

Pateros Irrigation District
164 B Hwy 153
Pateros, WA 98846

Bridgeport Bar Irrigation District
P.O. Box 353
Brewster, WA 98812

Methow-Okanogan Reclamation District
P.O. Box 645
Brewster, WA 98812

Bridgeport Irrigation District
P.O. Box 624
Bridgeport, WA 98813

Mutual Irrigation District
1105 Indian Avenue West
Brewster, WA 98812

In addition to the counties, political subdivisions in the general area likely to be interested in the relicensing of the Wells Project include:

City of Brewster
P.O. Box 340
Brewster, WA 98812

City of Pateros
P.O. Box 8
Pateros, WA 98846

City of Bridgeport
P.O. Box 640
Bridgeport, WA 98813

City of Rock Island
P.O. Box 99
Rock Island, WA 98850

City of East Wenatchee
271 Ninth Street NE
East Wenatchee, WA 98802

City of Waterville
P.O. Box 580
Waterville, WA 98858

Town of Mansfield
P.O. Box 218
Mansfield, WA 98830

Port of Douglas County
3306 5th Street SE
East Wenatchee, WA 98802

Affected Indian tribes with reservation lands adjacent to the Project:

Confederated Tribes of the Colville Reservation
P.O. Box 150
Nespelem, WA 99155

Affected Indian tribes with Treaty fishing rights downstream of the Project:

Confederated Tribes and Bands of the Yakama Nation
P.O. Box 151
Toppenish, WA 98948

Confederated Tribes of the Umatilla Indian Reservation
P.O. Box 638
Pendleton, OR 97801

9.0 INFORMATION AVAILABLE TO THE PUBLIC

Douglas PUD has encouraged all interested parties to receive relicensing documents in electronic format through email or the relicensing website. The license application and associated documents can be found at www.douglaspud.org/relicensing. The communication protocol established for the Wells Project integrated relicensing process is described in greater detail in Section 2.3 of the Pre-Application Document, filed with the FERC December 1, 2006. The communication protocol can also be found on the Wells Relicensing Website: http://relicensing.douglaspud.org/communication/communication_protocol.asp

Concurrent with this filing, Douglas PUD will publish notices of the availability of this license application in the June 3rd and 10th, 2010 editions of the following newspapers:

- Wenatchee World, P.O. Box 1511, Wenatchee, WA 98807-1511
- Empire Press, 832 Valley Mall Parkway, East Wenatchee, WA 98802
- Quad City Herald, 525 W Main Ave, Brewster, WA 98812

10.0 EXHIBITS

The Exhibits that are filed with the FERC as part of this Application for New License for Major Project – Existing Dam are:

- Exhibit A Project Description
- Exhibit B Project Operations and Resource Utilization
- Exhibit C Construction History
- Exhibit D Statement of Costs and Financing
- Exhibit E Environmental Exhibit
- Exhibit F General Design Drawings
- Exhibit G Project Maps
- Exhibit H Plans and Ability of Applicant to Operate the Project

The Historic Properties Management Plan, an appendix to Exhibit E, contains privileged information, and Exhibit F contains Critical Energy Infrastructure Information (CEII); these items are filed in their entirety with the FERC but will not be made available to the public. The foregoing Initial Statement and attached Exhibits are hereby made a part of this Application for New License for Major Project – Existing Dam.

IN WITNESS WHEREOF, Applicant has caused its name to be hereunto signed by William C. Dobbins, its General Manager, and attested to by Ronald E. Skagen, its Secretary, all thereunto duly authorized this ____ day of _____, 2010.

By: _____

Attest:

By: _____

This application is executed in the State of Washington, County of Douglas, by:

William C. Dobbins, General Manager
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, WA 98802

being duly sworn, deposes and says that the contents of this application are true to the best of his knowledge or belief. The undersigned Applicant has signed the application this ____ day of _____, 2010.

(Applicant)

By:_____

Subscribed and sworn to before me, a Notary Public this ____ day of _____, 2010.

/SEAL [if any]

(Notary Public, or other authorized official)

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WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT A - PROJECT DESCRIPTION

Prepared by:
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, WA 98802
www.douglaspud.org/relicensing

May 2010

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EXHIBIT A - PROJECT DESCRIPTION

The following excerpt from the Code of Federal Regulations (CFR) at 18 CFR § 4.51(b) describes the required content of this Exhibit.

Exhibit A is a description of the project. This exhibit need not include information on project works maintained and operated by the U.S. Army Corps of Engineers, the Bureau of Reclamation, or any other department or agency of the United States, except for any project works that are proposed to be altered or modified. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain:

(1) The physical composition, dimensions, and general configuration of any dams, spillways, penstocks, powerhouses, tailraces, or other structures, whether existing or proposed, to be included as part of the project;

(2) The normal maximum surface area and normal maximum surface elevation (mean sea level), gross storage capacity, and usable storage capacity of any impoundments to be included as part of the project;

(3) The number, type, and rated capacity of any turbines or generators, whether existing or proposed, to be included as part of the project;

(4) The number, length, voltage, and interconnections of any primary transmission lines, whether existing or proposed, to be included as part of the project (see 16 U.S.C. 796(11));

(5) The specifications of any additional mechanical, electrical, and transmission equipment appurtenant to the project; and

(6) All lands of the United States that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by the best available legal description. The tabulation must show the total acreage of the lands of the United States within the project boundary.

1.0 PROJECT LOCATION

Wells Dam is located in Washington State at river mile (RM) 515.6 of the Columbia River, 30 miles downstream of the U.S. Army Corps of Engineers (COE) Chief Joseph Dam, and 42 miles upstream of the Public Utility District No. 1 of Chelan County's (Chelan PUD) Rocky Reach Dam. The nearest town is Pateros, Washington located at RM 523.9, 8.3 miles upriver from Wells Dam.

The Wells Reservoir is 29.5 miles long. The Methow and Okanogan rivers enter the Columbia River within the Wells Reservoir. The Wells Project Boundary extends 1.5 miles up the Methow River and 15.5 miles up the Okanogan River. Within the Wells Hydroelectric Project (Project), the Columbia River forms the boundary between Douglas County and three other governmental jurisdictions: Okanogan County, Chelan County, and the Colville Indian Reservation (Figure 1.0-1).

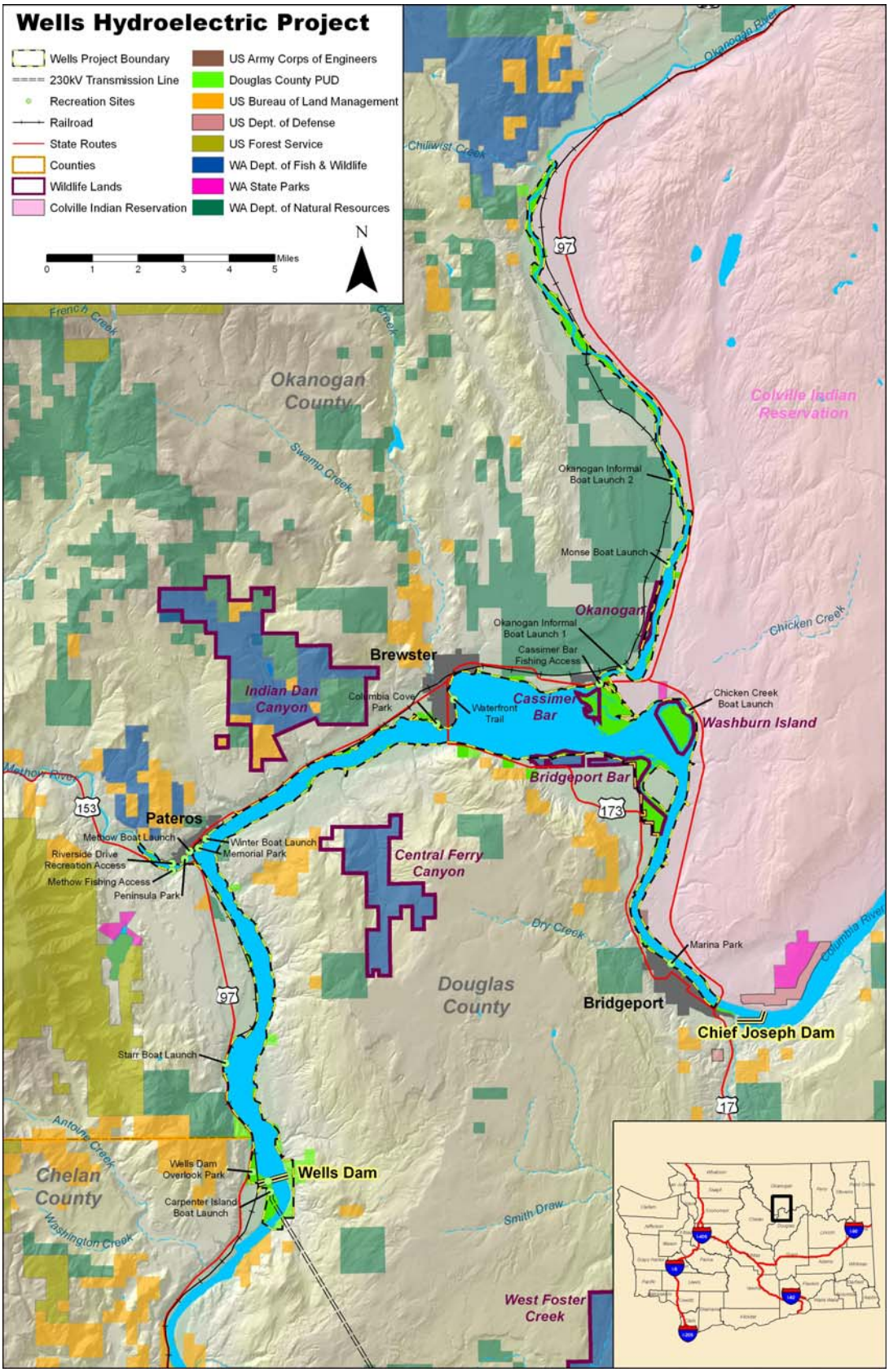

Figure 1.0-1 Map of the Wells Project.

2.0 PROJECT FACILITIES

On July 12, 1962, the Federal Power Commission (FPC), predecessor to the Federal Energy Regulatory Commission (FERC), granted the Public Utility District No. 1 of Douglas County, Washington (Douglas PUD) a 50-year license for the construction and subsequent operations of the Wells Project. The initial design and license for the Wells Project called for the installation of seven turbine-generator units. Construction of the Wells Project began in the fall of 1963. On February 2, 1965, the FPC approved Douglas PUD's application to amend the original license to include three additional generating units. Commercial operation of the originally-designed seven-unit Wells Project began on September 1, 1967. The three additional units were in commercial operation by January 24, 1969.

Wells Dam consists of a west embankment, a central concrete structure and an east embankment. The Wells Project also includes a forebay, reservoir, tailrace, fish hatchery facilities, service buildings, high-voltage transmission lines, recreation facilities and lands, all located within the Wells Project Boundary.

Individual descriptions of the major facilities and components of the Wells Project are provided below.

2.1 Wells Dam

The design of Wells Dam is unique to the Columbia River with the generating units, spillways, switchyard and fish passage facilities combined into a single structure referred to as the hydrocombine. The hydrocombine structure is 1,130 feet long and 168 feet wide with a top elevation at 795 feet above mean sea level (msl). Its design includes a series of 11 spillway bays and 10 separate generating units. The generating units are isolated in individual silo-like structures with the spaces between the units serving as spillway bays. The turbine water passages are located below the spillway bays (Figure 2.1-1).

Figure 2.1-1 Wells Dam looking to the northwest.

Earth embankments extend from the hydrocombine to the west and east abutments. The west embankment is 2,300 feet long and 40 feet high, with a top elevation of 797 feet. The west embankment consists of a central impervious core with a filter zone on each side and gravel shells. The core extends to a trench below which provides an impervious cut-off to bedrock.

The east embankment is 1,030 feet long with a maximum height of 160 feet above foundation level. The east embankment also has a top elevation of 797 feet. It extends from the hydrocombine to the east abutment. The east embankment consists of a central impervious core extending to the riverbed materials with filters and gravel and rockfill shells placed on each side of the core.

2.2 Reservoir

The body of water formed by Wells Dam is known as the Wells Reservoir (Figure 2.2-1). The Wells Reservoir extends 29.5 miles up the Columbia River, 1.5 miles up the Methow River, and 15.5 miles up the Okanogan River. The normal maximum water surface elevation of Wells Reservoir (i.e., normal full pool) is 781 feet. At this elevation, the Wells Reservoir surface area is 9,740 acres, the gross storage capacity is 331,200 acre-feet (ac-ft), and the usable storage capacity is 97,985 ac-ft. Most of the Wells Reservoir shoreline has a relatively steep topography with banks rising sharply to an elevation of 20 to 40 feet above the Wells Reservoir. Exceptions to this include the shoreline area in Pateros, a stretch of shoreline near Brewster, and lands near the mouth of the Okanogan River, including Washburn Island and Bridgeport Bar. Most reservoir lands located within the Wells Project Boundary (over 99%) are owned in fee title by

Douglas PUD. The reservoir has 108 miles of reservoir shoreline, the overwhelming majority of which is undeveloped.

Figure 2.2-1 Wells Reservoir looking upstream.

2.3 Tailrace

The Wells Tailrace, as defined in the Wells Anadromous Fish Agreement and Habitat Conservation Plan (Exhibit E; Appendix E-1) (Douglas County 2002*a*), is the body of water from the toe of Wells Dam to a point 1,000 feet downstream. The Wells Project Boundary actually extends downstream of the Wells HCP's tailrace definition to a point 1.2 miles downstream of the dam. The width of the tailrace at the downstream face of the powerhouse is 1,000 feet. The width of the tailrace at its widest point is approximately 1,900 feet.

The tailrace begins at the exit of the draft tubes and consists of natural riverbed. Rock riprap lines the immediate left and right banks of the tailrace to prevent erosion during larger spill events. An excavated rock trap, approximately 13 feet deep and 30 feet wide, runs the length of the hydrocombine immediately downstream of the draft tube exit sill. The trap was excavated into bedrock during construction based on the results of previous hydraulic modeling of tailrace scour. High spill volumes during early operations of the Project filled the rock trap with riverbed materials as predicted by the model studies. The trap was re-excavated in 1967 to remove the deposited materials. Accumulated materials are removed from the trap from time to time as part of normal operations of the Wells Project.

Tailwater elevations and velocities at the Wells Project are influenced by the reservoir formed by the Rocky Reach Dam located 42 miles downstream of Wells. The tailwater elevation at the

Wells Tailrace is a result of both the flow of water through Wells Dam and the forebay elevation maintained by the Rocky Reach Project.

2.4 Turbines-Generators

Wells Dam has 10 generating units with an installed nameplate capacity of 774,300 kilowatts (kW) and a maximum generating capability of 840,000 kW. The turbine-generator units rotate at a synchronous speed of 85.7 revolutions per minute (rpm). The average annual net[1] energy production for water years 1989 through 2007 was 4,364,959 megawatt-hours (MWh), yielding a plant factor of 64 percent.

Each generating unit is housed in a concrete structure 95 feet wide and 172 feet long. Each structure contains a vertical-shaft Kaplan turbine. The original turbine runners were supplied by Allis Chalmers. The original turbine runners were replaced with Fuji Electric runners during the period from 1988 to 1990. Each turbine is rated at 120,000 horsepower (hp) at 64 feet net head and a discharge of 22,000 cfs (Billenness and Lemon 2007). The generators are rated at 81,500 kilovolt-amperes (kVA) and 0.95 power factor with an output voltage of 14.4 kilovolts (kV). The turbines are controlled by governors manufactured by Woodward Governor Company and equipped with digital controls manufactured by Sulzer, Inc. The digital controls were installed during the period from 1998 to 2000. Each individual unit includes its own local governor control system which is integrated into the overall plant control system.

2.5 Switchyard

The Wells Project switchyard is located atop the hydrocombine deck at elevation 795 feet. The switchyard includes five step-up transformers, one auto transformer and 10 circuit breakers in addition to insulators, disconnect switches, grounding switches, current transformers, potential transformers, and a three-phase bus system (Figure 2.5-1).

The five step-up transformers manufactured by General Electric Company are located on the deck of the hydrocombine underneath the aluminum bus lines. Each transformer is connected to two generating units. The transformers, rated at 187,500 kVA each, convert power generated from the units at 14.4 kV to 230 kV for transport on the two 230 kV Wells Project transmission lines.

The switchyard includes ten 230 kV circuit breakers manufactured by Alstom T&D, Inc. The breakers are three-phase, puffer type, SF6 gas breakers installed from 2002 to 2003. Five of the 10 circuit breakers are tied to each of the five main power transformers at the 230 kV side of the transformer. Three of the 10 circuit breakers serve as transmission line breakers and are tied to the 230 kV transmission lines. Of the remaining two breakers, one is a bus tie breaker used for connecting the two main bus sections, and the other serves as the transfer bus breaker to be used when any one of the other breakers is out of service.

[1] Net energy generation equals gross generation minus station service and transmission losses.

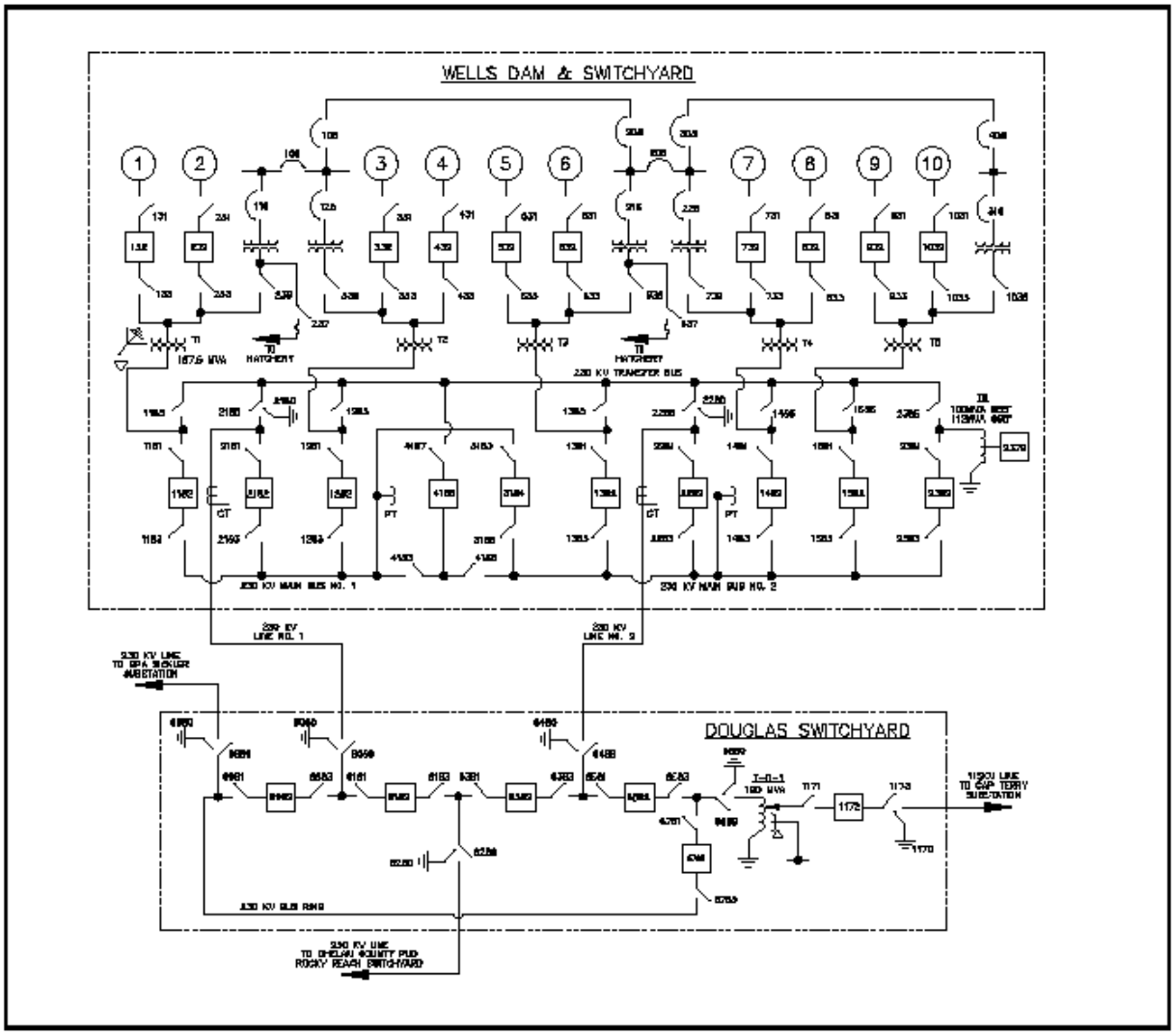

Figure 2.5-1 Single-line diagram showing the Wells Project switchyard and transmission facilities.

The three phases of each bus are comprised of 3-inch tubular aluminum supported by a series of symmetrical steel towers. The towers are 71 feet tall, have a T-type cross member, and function as the main structural component of the bus system. The bus system consists of parallel conductors separated into three segments (Main Bus 1, Main Bus 2, and a Transfer Bus). Main Bus 1 is connected to four generating units. Main Bus 2 is connected to six generating units. In normal operation, the two busses are electrically connected, acting as a single bus. The transfer bus configuration allows circuit breakers or other power components to be bypassed for maintenance purposes. Two parallel 230 kV transmission lines transport the power from Wells Dam to the grid.

2.6 Transmission System

The Wells Project includes two 230 kV single-circuit transmission lines (Figures 2.6-1 and 2.6-2). Each 230 kV transmission line is capable of transmitting the entire output of the Wells Project. The lines run approximately 41 miles in length from the switchyard atop the hydrocombine to the Douglas Switchyard operated by Douglas PUD. The lines run parallel to each other on 45- to 85-foot steel towers along a common 235-foot-wide right-of-way. The Douglas Switchyard is located in close proximity to the Rocky Reach Switchyard, operated by Chelan PUD and the Sickler Substation, operated by the Bonneville Power Administration (BPA). The 230 kV lines connect to the regional transmission grid at BPA's Sickler Substation.

Figure 2.6-1 Wells Project transmission lines.

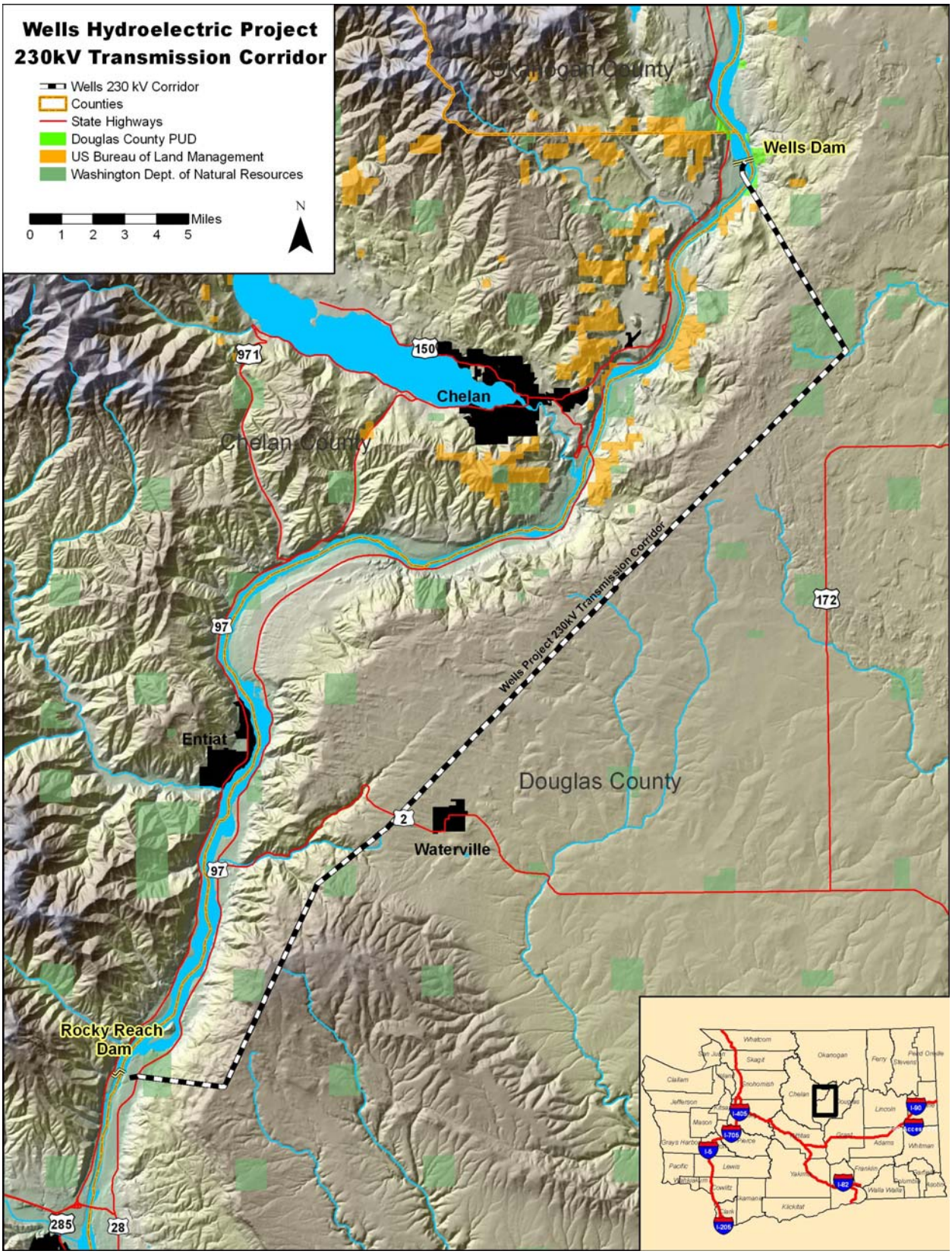

Figure 2.6-2 Wells Project 230 kV transmission corridor.

2.7 Spillway

Wells Dam contains eleven 46-foot-wide gated spillways capable of passing a total of 940 kcfs at normal full pool elevation of 781 feet msl, and 1,180 kcfs at maximum water surface elevation of 791 feet msl. The forebay elevation is controlled by fixed-wheel vertical lift gates located in the spillway bays. Each spillway gate is 66 feet in height and composed of two sections or two leaf segments. The upper leaf is approximately 35 feet in height. The lower leaf is approximately 36 feet in height. The upper leaf has a rubber seal on the bottom and the lower leaf has a rubber seal on its top. This sealing design minimizes leakage from the forebay when the gates are closed.

The lower leaf of each spillway gate can be raised to release water from the Wells Reservoir when needed. The lower leaf can be raised to any increment from zero up to a normal maximum of 28 feet 6 inches. The lower leaves of gates 3 through 9 are attached by cable to stationary hoists. Raising the seven lower gate leaves to their normal fully-opened position can accommodate passage of 330 kcfs. The hoists that raise these lower gate leaves can be operated by push button from a control cabinet located next to each gate on the hydrocombine deck or from Wells Dam's main control room. The lower leaves of gates 1, 2, 10, and 11 are raised by one of the two gantry cranes located on the hydrocombine deck. Raising the lower gate leaves of these four gates to their fully-opened position can accommodate passage of an additional 190 kcfs for a total spill of approximately 520 kcfs using the bottom gate leaves with a reservoir elevation of 781.0 feet. Dogging brackets along the sides of each gate provide support for the gates when raised. The upper gate leaves of spillways 2 and 10 are equipped with an automatic hoist for opening two sluiceways. These sluiceways are used to pass ice and debris.

For the handling of larger flows, the upper and lower leaves of the spillway gates can be raised using the gantry cranes and dogged at their maximum opening of 68.5 feet. Raising the upper gate leafs requires the removal of the stationary hoists and steel railings above the spillway gates by hoists. The 11 lower gate leafs can accommodate all but the most extreme spill events.

In the case of a power loss at the dam, spillway gates 3 through 9 can be operated through a backup power supply system. This system consists of a 300 kW diesel generator which is located atop the hydrocombine deck at elevation 795 feet. The generator is connected to an emergency transfer switch and a standby generator power panel equipped with spillway power supply breakers.

2.8 Juvenile Fish Passage Facilities

Construction of the Wells Project's juvenile fish bypass system was completed in 1989. The bypass system was developed to guide downstream migrating fish away from the turbines and through the spillways. The bypass system has a fish passage efficiency rate of 92.0 percent for spring migrating salmon and steelhead and 96.2 percent for summer migrating Chinook salmon (Skalski et al. 1996). The Wells Project juvenile fish bypass system is the most efficient system on the mainstem Columbia River. The system was developed by Douglas PUD and uses a barrier system to modify the intake velocities on spillways 2, 4, 6, 8, and 10.

Each spillway has three sections. The bypass system modified the spillway sections by the installation of fabricated steel barriers. The two outside barriers prevent flow from entering the spillway while the middle slotted barrier allows water to enter at a higher velocity than an unmodified spillway intake. The slotted barrier has an opening that is 16 feet wide and 72 feet deep. During bypass operations, the lower leaf gate on each of spillways 2, 4, 6, 8, and 10 is opened approximately 1 foot when an adjacent generating unit is operating. Spillways 2 and 10 are also configured to allow passage either through top spill at the sluiceways or through bottom spill. Since most juvenile salmon and steelhead migrate near the surface, with the help of the bypass system, they successfully pass Wells Dam and avoid the turbine intakes which are located much deeper in the forebay. The bypass system is in operation annually from mid-April until late-August. Because all 11 spillways may be needed during periods of extreme flows, the bypass barriers are designed to collapse when the spillway gates are opened more than 6 feet (Figure 2.8-1).

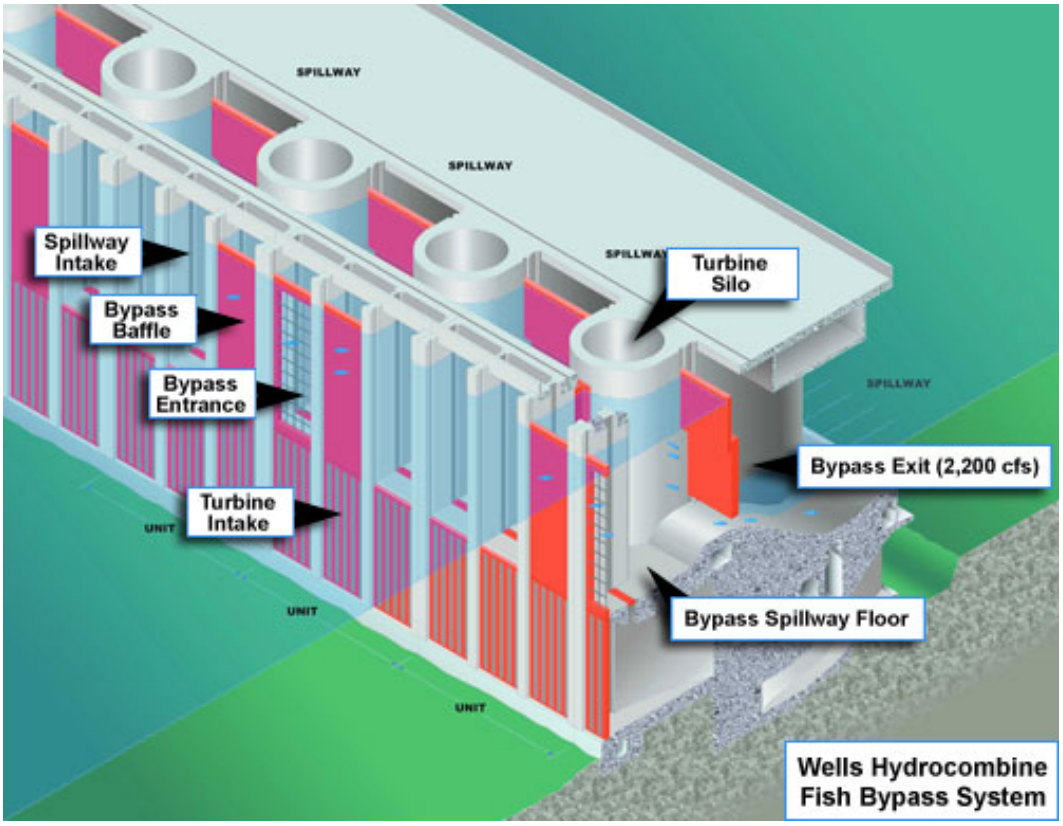

Figure 2.8-1 Wells juvenile fish bypass system.

2.9 Adult Fish Ladders

Wells Dam has two adult fish ladders, one on each end of the hydrocombine (Figure 2.9-1). These ladders facilitate the upstream movement of migrating fish through Wells Dam. The two fish ladders at Wells Dam are conventional staircase-type fish ladders with 73 pools. At each pool, the water drops approximately 1 foot until this water reaches the level in the collection gallery. Supplemental water can be added at each inundated pool at the upper end of the collection gallery. The upper pools in the adult fishway, Pools 73 to 56, discharge water from

one pool to another through orifice openings in the fishway weirs. Each weir in the upper portion of the adult fishways also contains two orifice openings. These orifices are located 1 foot from the base of the weir. This design provides a sanctuary pool between each of the upper fishway weirs. From Pool 56 downstream to the collection gallery, water passes from one pool to the next via orifice openings and weir overflows.

To accommodate the full 10 feet of allowable reservoir operating range, the drop between the upper 17 pools varies from 1 foot at a normal maximum reservoir level to 6 inches at normal minimum reservoir level. The flow through the upper 17 ladder pools consequently varies from 44 cfs at full reservoir to about 31 cfs at minimum reservoir level. To increase the flow to the 48 cfs required in the lower ladder pools, supplementary water is introduced into Pool 56 through a pipeline from the reservoir.

Pools 67 and 68 of both fish ladders are equipped with adult passive integrated transponder (PIT) tag detection devices. These devices are used to passively interrogate each fish for a PIT-tag while the fish are passing upstream through the fish ladder. Once a tag is detected, the system records the presence and unique tag code for that fish as it ascends the fish ladder. Pool 64 of both fishway ladders contains facilities for counting fish. The main features of the counting facility include a counting room, an observation window into the fish ladder, a telescoping gate to guide the fish closer to the observation window, a light panel, and a bypass gate to control the flow and velocity past the observation window. Video records of fish passage are collected continuously starting on May 1 and continuing through November 15. The videos are then reviewed and counts of fish by species and by ladder are made available on a daily basis through coordination with the COE adult fish counting program and the University of Washington's DART website.

Figure 2.9-1 Wells adult fish ladder weirs.

At Pool 40, each of the two fish ladders has provisions for sorting and trapping various species of fish. In recent years, these trapping facilities have been fitted with adult PIT-tag detection devices. The west ladder sorting facility allows for selected fish to travel through a flume to a holding pond at the Wells Hatchery. The east ladder sorting facility allows fish to travel to a holding container where they can be anesthetized, netted, and placed in transportation containers to be moved to appropriate hatchery facilities or to be sampled and released back into the ladder upstream of the trap. The fisheries agencies and tribes currently develop species-specific broodstock collection protocols at the beginning of each season in consultation with the Wells HCP Hatchery Committee (Anchor and Douglas PUD 2009).

At the bottom of each fish ladder, projecting downstream from the hydrocombine is the portion of the endwall structure that incorporates the functions of fish attraction and collection. Two turbine-driven pumps on each ladder deliver fish-attraction flows of 800 to 2,500 cfs (depending upon tailwater elevation) to the water supply chamber located immediately adjacent to the collection gallery. Flow from the supply chamber is discharged into the upper sections of the collection gallery where it is used to maintain an attraction velocity of 2 feet per second and is also discharged into the main collection gallery at the foot of the ladder through diffusion gratings. The total fishway flow from the turbine-driven pump(s) and the 48 cfs coming down the ladder from the forebay is discharged into the tailrace through a gated fish entrance at the downstream face of each collection chamber. Modification to ladder operations can only take place following approval by the Wells HCP Coordinating Committee.

The fish attraction system is operated to provide a 1.5-foot differential between the main collection gallery and tailwater by constantly adjusting the output of the fish pumps. Under normal conditions, the fish pumps operate automatically to maintain a pre-set differential level between the water supply chamber and the main collection chamber. Fishways are inspected daily to ensure debris accumulations are removed, automated fishway instruments are calibrated properly, and lights in the fishway are functioning.

2.10 Station Service

Station service power at Wells Dam consists of five unit substations. Each substation includes one transformer, one main circuit breaker, and multiple feeder breakers. Each of the five substations is located at Wells Dam elevation 776 feet and is connected to a bus served by two generating units.

The substations are connected together via a main bus system with tie breakers. Each pair of generators provides power to one substation. This design allows any substation to provide power to other substations if the need arises. Each substation includes a 2,000 kVA, 3-phase, 60-cycle transformer manufactured by Federal Pacific Electric Company. The transformers convert 14.4 kV power supplied from their respective pair of generators to 480 volt (V) power for the substations. This 480 V power is then supplied from the substations to the Project's lighting system and to Motor Control Centers located at elevations 720 and 776 feet for each of the 10 generating units.

The control centers are equipped with a reactor, 120/208 V distribution panel, and breakers. The control centers supply 480 V power to a variety of ancillary equipment and devices in each generating unit.

All substations were manufactured by Federal Pacific Electric Company and installed during construction of Wells Dam. The substations were upgraded in 2004 when the Federal Pacific Electric Company circuit breakers in each substation were replaced with breakers manufactured by Asea Brown Boveri Ltd (ABB).

2.11 Back-up Power Supply

In the case of a power loss at the dam, there are four potential back-up power sources: on site battery reserves; two 1800 kW diesel generators and a 300 kW diesel generator. Any of these sources can be used as an emergency power supply.

2.12 Pressurized Draft Tube Gate Gallery

Wells Dam includes a pressurized draft tube gate gallery. The turbine draft tube gates in Wells Dam are stored in a continuous gallery running the length of the hydrocombine. The gallery is located within the concrete structure because the spillway configuration does not allow the draft tube gates to be lowered into place from the powerhouse deck as at conventional hydroelectric plants. Air pressure is maintained in the gallery to balance the tailwater pressure and permit the gates to be stored and moved horizontally in the dry. Two sets of three gates each are suspended

from hoists that travel horizontally on embedded rails to be positioned for vertical lowering of the gates into draft tube gate slots of units to be dewatered for maintenance. Personnel and material air locks and a medical lock are operated to allow operation and maintenance of the gates and hoists. Gallery pressure is maintained by sequentially-controlled air compressors.

2.13 Gantry Cranes

Wells Dam is equipped with two steel gantry cranes located on the deck of the hydrocombine (elevation 795 feet). The cranes were supplied by Yuba Manufacturing Company and were used during construction of Wells Dam. The cranes are used for moving equipment and for lifting parts during maintenance and repairs. Each crane is approximately 120 feet long, 80 feet high, and 35 feet wide and equipped with four legs and four upper connecting beams. The cranes move both east and west on wheeled tracks that run the length of the dam. Trolleys atop the cranes are capable of moving north and south across the width of the dam.

One crane is rated at 450 tons and has two trolleys, which can move independently of each other. Each trolley has two 112.5-ton main hooks and one 30-ton auxiliary hook. Since the two trolleys on the 450-ton crane move along the same track, their hooks can function together to raise heavy equipment such as generator rotors. The second crane is rated at 300 tons and has a single trolley capable of moving horizontally along the length of the upper beam. The single trolley is equipped with two 150-ton main hooks and one 30-ton auxiliary hook. It is equipped for general use and is capable of handling turbine parts. Both cranes are used for handling the spillway gates and intake gates. The cranes can be fully operated from within their lower control cabinets or via a remote-controlled device. The cranes can also be operated remotely from Wells Dam's control room to raise certain spillway gates.

3.0 FISH HATCHERY FACILITIES

Douglas PUD owns and provides funding for the operation and maintenance of two hatchery facilities. The Wells Fish Hatchery is located within the Project Boundary immediately adjacent to Wells Dam on the west tailrace embankment. The Methow Fish Hatchery is located outside the Project Boundary approximately 51 miles upstream of the mouth of the Methow River near the town of Winthrop, Washington. Both hatchery programs are funded by Douglas PUD and operated by the Washington Department of Fish and Wildlife (WDFW). The hatchery programs annually produce approximately 2.5 million juvenile salmon and steelhead that are released into the Methow, Okanogan, and Columbia rivers.

3.1 Wells Hatchery

Construction of the original Wells Hatchery was completed in 1967. The hatchery currently produces summer Chinook, steelhead, and rainbow trout (Figure 3.1-1). It was originally developed to compensate for the loss of Chinook production resulting from the inundation of the Columbia River above the dam. The Wells Hatchery consists of a 6,100-foot-long channel with portions of the channel having been modified to hold adult and juvenile fish, numerous above-ground and in-ground raceways, four large earthen rearing ponds, a centralized incubation and

early rearing area, cold storage, and an administration building, vehicle storage building, steelhead spawning building, and a separate set of residences for hatchery personnel.

Figure 3.1-1 Wells Fish Hatchery.

The Wells Hatchery includes four earthen rearing ponds which vary in size and purpose. Pond 1 is used for rearing yearling summer Chinook and is connected to the main hatchery outfall channel via a gate and outlet structure. When acclimated and ready for release, the juvenile summer Chinook are allowed access to the main hatchery outfall channel and are volitionally released into the Columbia River below Wells Dam. Pond 2 is the largest pond and has historically been used to raise yearling Chinook and steelhead. Ponds 3 and 4 are used each year for rearing yearling steelhead. All of the earthen steelhead rearing ponds have volitional collection and transportation facilities located downstream of their outlet structures. The steelhead raised at the Wells Hatchery are either transported and released by truck or acclimated in the Methow and Okanogan rivers.

The Wells Hatchery is operated to provide compensation for both inundation and passage losses as described in the Wells HCP. The inundation compensation related to Wells Project construction includes the production of 320,000 yearling summer Chinook, 484,000 subyearling summer Chinook and 300,000 yearling steelhead. The Wells HCP passage loss compensation provided by the Wells Hatchery is 48,858 yearling steelhead annually (3.8 percent).

3.2 Methow Hatchery

The Methow Fish Hatchery is 51 miles from the Project and produces fish for Project (Wells HCP) and non-Project purposes. Construction of the Methow Hatchery (Figure 3.2-1) was completed in 1992 and is the result of a Fish Settlement Agreement dated October 1, 1990 (1990 Settlement Agreement) to mitigate for passage losses at the Wells Project. In 2004, the Wells HCP was approved by the FERC and superseded the 1990 Settlement Agreement. As a result, implementation of the Wells HCP now guides activities related to the Wells Project at the Methow Hatchery. The Methow Hatchery produces yearling spring Chinook salmon. The Methow Hatchery consists of 12 covered production raceways, three covered adult raceways, a centralized incubation, early rearing, administrative and hatchery maintenance building, one on-site acclimation pond, two satellite acclimation ponds, and a separate set of residences for hatchery personnel.

The Methow Hatchery program currently raises up to 550,000 yearling spring Chinook each year. Wells HCP production obligations are adjusted periodically based on results of survival studies. The Methow Fish Hatchery continues to meet the Wells Project Upper Columbia River (UCR) spring Chinook salmon hatchery production obligation under the Wells HCP; however, the Methow Fish Hatchery is not exclusively a Wells Project facility as a large portion of the production is for non-Project purposes. Costs provided in Exhibit D associated with the Methow Fish Hatchery and UCR spring Chinook Hatchery Genetic Management Plan (HGMP) reflect only the portion of costs related to the Wells HCP.

Figure 3.2-1 Methow Fish Hatchery.

4.0 EXISTING PROJECT RECREATION FACILITIES

The Wells Project currently provides significant recreation opportunities for local residents and visitors. There are numerous access points to the Wells Reservoir and associated Project lands. Access to the Wells Reservoir from the greater Seattle/Puget Sound area is most common via Interstate 90 over Snoqualmie Pass to U.S. Highway 97. Highway 97 borders the Wells Reservoir on the west and extends into British Columbia. Other routes from western Washington include U.S. Highway 2 over Stevens Pass and summer access via State Route 20 (also known as the North Cascades Highway). Visitors from eastern Washington typically visit the area via U.S. Highway 2 from Spokane. Canadian visitors access the area by heading south on U.S. Highway 97, which meets the Wells Reservoir near Malott, Washington.

Many people take advantage of the recreation opportunities provided at the Wells Project during the spring and summer for boating, fishing, bird watching, hiking, and recreational vehicle (RV) camping. Additionally, sportsmen visit the area during the fall season to fish for steelhead and to hunt waterfowl, upland birds, and deer.

Douglas PUD's approach to developing and enhancing recreational access has been documented in its Wells Recreation Plan (1967), Wells Recreation Plan Supplement (1974), Public Use Plan (1982) and Recreation Action Plans (Douglas PUD 1987, 1992, 1997, 2002*b*, and 2007). Douglas PUD's commitment to recreation has resulted in the development of 17 recreation access sites, and four wildlife areas within the Wells Project Boundary. Douglas PUD has funded and developed major parks and recreation facilities along the Wells Reservoir in Pateros, Brewster, and Bridgeport and along the lower reaches of the Methow and Okanogan rivers.

Figure 1.0-1 shows the Wells Project and recreation sites. Descriptions of existing recreational sites and facilities within the Wells Project area are provided below.

4.1 Recreation Facilities within the Cities of Pateros, Brewster, and Bridgeport

All Project recreation facilities described in this section are located within the Wells Project Boundary.

4.1.1 Facilities in Pateros

Project-related recreation facilities located within the city of Pateros include Peninsula Park, Memorial Park, one Methow River recreation access site, two boat launches, parking, and restrooms.

4.1.1.1 Peninsula Park

Peninsula Park is located near the confluence of the Methow and Columbia rivers. It includes one gazebo, a paved walking path, a covered picnic shelter, a swimming beach, restroom facilities, playground equipment, a swimming lagoon, and a lawn area (Figure 4.1-1).

Figure 4.1-1 View of Peninsula Park.

4.1.1.2 Memorial Park

Memorial Park is located in Pateros along the Columbia River. It includes three covered picnic shelters, fishing and ski docks, vehicle parking, interpretive displays, playground equipment, concrete water access ramp, restroom facilities, and a developed waterfront trail with park benches and lighting. The waterfront trail begins at the east end of Memorial Park near City Hall and meanders through the park, under the Highway 97 Bridge and terminates at the Methow Boat Launch (Figure 4.1-2).

Figure 4.1-2 View of Memorial Park and waterfront trail.

4.1.1.3 Pateros Winter Boat Launch

The Pateros Winter Boat Launch is located in Pateros upstream of Memorial Park along the Columbia River. The site includes a concrete boat launch, dock, and parking. The boat launch area is connected to the upstream end of Memorial Park. This boat launch provides year-round access to the Wells Reservoir, including winter when the Methow Boat Launch may be unusable due to ice on the Methow River.

4.1.1.4 Methow Boat Launch

The Methow Boat Launch is located in Pateros between Peninsula Park and Memorial Park at the confluence of the Columbia and Methow rivers. The site includes a concrete boat launch and dock, parking, basketball hoops, and restrooms. The boat launch area is connected to Memorial Park via an accessible walkway underneath Highway 97 and the railroad bridge.

4.1.1.5 Riverside Drive Recreation Access

The Riverside Drive Recreation Access is located along the left bank of the Methow River, upstream from Peninsula Park. The site includes a gradual landscaped access to the Methow River for fishing, kayaking, or canoeing.

4.1.2 Facilities in Brewster

Project-related recreation facilities located within the city of Brewster include Columbia Cove Park and a developed waterfront trail.

4.1.2.1 Columbia Cove Park

Columbia Cove Park includes a boat launch, boat docks, three covered picnic shelters, a swimming beach, restroom facilities, playground equipment, a lawn area, and vehicle parking (Figures 4.1-3 and 4.1-4).

Figure 4.1-3 Columbia Cove Park picnic shelter and play equipment.

Figure 4.1-4 Columbia Cove Park swimming area.

4.1.2.2 Brewster Waterfront Trail

The waterfront trail in Brewster is located north of Columbia Cove Park and consists of a compacted stone surface that extends approximately ½ mile along the Brewster city waterfront. The City of Brewster developed the trail with the assistance of Douglas PUD and the Washington Department of Natural Resources (WDNR). The trail is generally 6 to 8 feet above the water level and 20 feet or more below adjacent streets and residential areas. It is connected to city streets at either end by ramps and at three intermediate locations by stairs.

4.1.3 Facilities in Bridgeport

Project-related recreation facilities include Marina Park, which is located within the Wells Project Boundary in the City of Bridgeport. The City of Bridgeport operates an 18-site RV park within Marina Park.

4.1.3.1 Marina Park

Marina Park includes a fish cleaning station, covered picnic shelters, gazebo, playground equipment, swimming lagoon with a beach, swim platform, a lawn area, restrooms, vehicle parking, an asphalt pathway, a boat launch, and an RV campground. The RV campground includes 18 full hookups and four tent sites (Figure 4.1-5).

Figure 4.1-5 Marina Park swimming area and boat docks.

4.2 Recreation Sites Outside the Cities

In addition to the facilities in Pateros, Brewster and Bridgeport, Douglas PUD has developed additional Project related recreation sites to provide access to all segments of the Wells Reservoir. These sites are described below.

4.2.1 Wells Dam Overlook

A viewing area overlooking Wells Dam from the west is located off of Highway 97. The Wells Dam Overlook includes vehicle and day-use RV parking, restrooms, and a picnic shelter. Exhibits at the Overlook include Native American pictographs, a Wells Project information kiosk, and an original Wells Project turbine runner. The Wells Dam Overlook is accessible 24-hours a day (Figures 4.2-1 and 4.2-2).

Figure 4.2-1 Wells Dam Overlook and Wells Project information signs.

Figure 4.2-2 Wells Dam Overlook and original turbine runner.

4.2.2 Carpenter Island Boat Launch

The Carpenter Island Boat Launch is a concrete plank boat launch located on the right bank of the Wells Tailrace immediately downstream of the Wells Project near RM 515.5. This boat launch is located within the Wells Project Boundary on land owned by Douglas PUD and is used primarily for fishing access. It includes a single launch lane and portable toilets. Access to this launch is provided via Azwell Road. As a recreation enhancement measure under the original Project license, Douglas PUD is currently relocating this boat launch to a more accessible location nearby. Relocating the launch is a separate action from relicensing and is contingent upon receiving the appropriate environmental permits.

4.2.3 Starr Boat Launch

The Starr Boat Launch is located on 2.1 acres of land on the right bank of the Wells Reservoir near RM 518. It is accessible via U.S. Highway 97. This site includes a gravel parking area, concrete boat launch and vault toilet. Recreation users access the Wells Reservoir via the Starr Boat Launch for boating, waterskiing, and waterfowl hunting.

4.2.4 Methow Fishing Access

The Methow Fishing Access site was funded by Douglas PUD and is located off of State Highway 153 approximately ½ mile from U.S. Highway 97 at the confluence of the Columbia and Methow rivers. The site is 2.4 acres and includes a gravel car-top boat launch, gravel parking area, and two vault toilets.

4.2.5 Chicken Creek Boat Launch

The Chicken Creek Boat Launch is located near RM 537 at Washburn Island where Chicken Creek flows into Washburn Pond. The facilities at the site are owned by Douglas PUD and include a concrete plank boat launch, parking area, and vault toilet. The boat launch provides access to Washburn Pond but not the Wells Reservoir.

4.2.6 Monse Bridge Boat Launch

The Monse Bridge Boat Launch was developed by Douglas PUD and is located on the right bank of the Okanogan River at RM 4.7. Facilities at the boat launch include a concrete plank launching ramp, parking area, and a vault toilet.

4.2.7 Cassimer Bar Fishing Access

The Cassimer Bar Fishing Access site was developed by Douglas PUD and is located on the left bank of the Okanogan River near RM 1. The site is in close proximity to the Highway 97 Bridge near the confluence of the Okanogan and Columbia rivers. This site includes shoreline access, a parking area, and a vault toilet.

4.2.8 Okanogan River Informal Boat Launch and Fishing Site 1

The Okanogan River Informal Boat Launch 1 is located on the right bank of the Okanogan River at RM 2.5. Public access to the site is available via Monse River Road off of U.S. Highway 97. This undeveloped area serves as a boat launch primarily for fishermen and waterfowl hunters. This site also provides shoreline fishing access.

4.2.9 Okanogan River Informal Boat Launch and Fishing Site 2

The Okanogan River Informal Boat Launch 2 is located on the right bank of the Okanogan River at RM 6.7. Public access to the site is available via Monse River Road. This undeveloped area serves as a boat launch for waterfowl hunters and fishermen. This site also provides shoreline fishing access.

4.3 Wildlife Areas

A variety of wildlife management areas are located along the Wells Reservoir and in upland areas in the vicinity of the Project. These management areas provide wildlife habitat and offer wildlife-related recreation opportunities, such as hunting and bird watching.

The Wells Wildlife Area (WWA) consists of over 8,200 acres of land within six different units throughout Douglas and Okanogan counties. This land was funded by Douglas PUD and developed by the WDFW for wildlife protection, mitigation, and enhancement (PM&E) purposes under the original operating license.

Douglas PUD has agreed to provide significant funding for the WWA during the next license term through an Off-License Settlement Agreement with WDFW. This agreement provides operation, maintenance, capital equipment funding, and habitat restoration funding for all six units of the WWA. Three of the six units, Bridgeport Bar, Okanogan and Washburn Island, are considered riparian wildlife units and are primarily within the Project Boundary. Although smaller in acreage than the upland units, totaling approximately 863 acres, the majority of active annual management occurs on the three riparian wildlife units. The upland wildlife units are predominantly shrub steppe and management is primarily custodial.

The Cassimer Bar Wildlife Management Area is comprised of 137 acres of predominantly-emergent wetlands, and is located along the eastern shore of the mouth of the Okanogan River on the Colville Indian Reservation. This land is owned by Douglas PUD, located within the Wells Project Boundary, and is jointly managed by Douglas PUD and the Colville Confederated Tribes (CCT).

Additional sites with significant wildlife habitat values exist within the Wells Project area. These are primarily undeveloped shorelines maintained in a natural condition. Douglas PUD's Land Use Policy is intended to maintain the habitat values of the undeveloped shoreline areas for both aquatic and terrestrial values.

5.0 PROJECT LANDS

There are approximately 108 miles of reservoir shoreline in the Wells Project. Also within the Project Boundary are approximately 15 miles of shoreline around isolated ponds, the largest being Washburn Pond.

On January 13, 2010, Douglas PUD received patents from the BLM for lands located in Chelan, Douglas and Okanogan County totaling 622.10 acres. This acquisition includes all BLM-administered lands within the Project Boundary and along the 230 kV transmission line right-of-way, as authorized by the Omnibus Public Land Management Act of 2009 (Public Law 111-11), Sec. 2606 (Exhibit A; Appendix A). As a result of this land conveyance, Douglas PUD now owns over 99 percent of the shoreline within the Wells Project Boundary.

Douglas PUD owns approximately 2,649 acres of the 2,664 acres of land adjacent to the Wells Reservoir within the Project Boundary. Lands within the Wells Project Boundary include shrub steppe; irrigated agriculture; wildlife habitat, such as the WWA; and recreation lands, including parks in Pateros, Brewster, and Bridgeport. Exhibit G contains detailed maps showing lands and waters within the Wells Project Boundary.

6.0 LANDS OF THE UNITED STATES

Within the Wells Project Boundary, there are small, scattered parcels of federal land (Table 6.0-1). In January 2010, Douglas PUD acquired all BLM land within the Project Boundary and along the 230 kV transmission line right-of-way, as authorized by the Omnibus Federal Land Act of 2009, Section 2606. As a result of this acquisition, total federal land within the Project Boundary was reduced to 15.15 acres administered under the Department of Interior (DOI) and COE. There are no National Park Service (NPS), U.S. Forest Service (USFS) or U.S. Fish and Wildlife Service (USFWS) lands within the Wells Project Boundary.

Table 6.0-1 Federal land occupied by the Wells Project.

Agency	PUD Tract No.	Acres	Legal Description
DOI	1137	3.6	T29N, R25E.W.M., Sec. 9: Lot 7
	820	0.6	T.30N., R 25E.W.M., Sec. 34: Lot 3,
	67	4.4	T30N, R24E.W.M., Sec. 12: Lots 3, 4
COE	919	1.0	T.29N., R25E.W.M., Sec. 15
	944	0.05	T.29N., R25E.W.M., Sec. 14
	1055	0.3	T.29N., R25E.W.M., Sec. 10: Lot 5
	1137	5.2	T29N, R25E.W.M., Sec 9: Lot 8

7.0 PROPOSED NEW FACILITIES

Douglas PUD is not proposing any new generation facilities. Non-generating facilities proposed to be constructed during the term of the new license include: (1) Douglas PUD's participation in a white sturgeon hatchery and rearing facility; (2) new interpretive displays, located within the Project Boundary but away from critical energy infrastructure; (3) major redesign and construction of new facilities and rehabilitation of aging infrastructure located at the Wells and Methow fish hatcheries, as directed by NMFS requirements for UCR spring Chinook salmon and UCR steelhead Hatchery Genetic Management Plans (HGMPs); and (4) the construction of additional Project-related recreation facilities.

8.0 REFERENCES

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Skalski, J.R., G.E. Johnson, C.M. Sullivan, E.Kudera, and M.W. Erho. 1996. Statistical evaluation of turbine bypass efficiency at Wells Dam on the Columbia River, Washington. Canadian Journal Fisheries Aquatic Science Vol. 53, No. 10, pages 2188-2198.

APPENDIX A

OMNIBUS PUBLIC LAND MANAGEMENT ACT OF 2009 SEC. 2606

Omnibus Public Land Management Act of 2009 (Public Law 111-11), Sec. 2606

SEC. 2606. DOUGLAS COUNTY, WASHINGTON, LAND CONVEYANCE.

(a) Definitions- In this section:

(1) PUBLIC LAND- The term `public land' means the approximately 622 acres of Federal land managed by the Bureau of Land Management and identified for conveyance on the map prepared by the Bureau of Land Management entitled `Douglas County Public Utility District Proposal' and dated March 2, 2006.

(2) PUD- The term `PUD' means the Public Utility District No. 1 of Douglas County, Washington.

(3) SECRETARY- The term `Secretary' means the Secretary of the Interior.

(4) WELLS HYDROELECTRIC PROJECT- The term `Wells Hydroelectric Project' means Federal Energy Regulatory Commission Project No. 2149.

(b) Conveyance of Public Land, Wells Hydroelectric Project, Public Utility District No. 1 of Douglas County, Washington-

(1) CONVEYANCE REQUIRED- Notwithstanding the land use planning requirements of sections 202 and 203 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1712, 1713), and notwithstanding section 24 of the Federal Power Act (16 U.S.C. 818) and Federal Power Order for Project 2149, and subject to valid existing rights, if not later than 45 days after the date of completion of the appraisal required under paragraph (2), the Public Utility District No. 1 of Douglas County, Washington, submits to the Secretary an offer to acquire the public land for the appraised value, the Secretary shall convey, not later than 30 days after the date of the offer, to the PUD all right, title, and interest of the United States in and to the public land.

(2) APPRAISAL- Not later than 60 days after the date of enactment of this Act, the Secretary shall complete an appraisal of the public land. The appraisal shall be conducted in accordance with the `Uniform Appraisal Standards for Federal Land Acquisitions' and the `Uniform Standards of Professional Appraisal Practice'.

(3) PAYMENT- Not later than 30 days after the date on which the public land is conveyed under this subsection, the PUD shall pay to the Secretary an amount equal to the appraised value of the public land as determined under paragraph (2).

(4) MAP AND LEGAL DESCRIPTIONS- As soon as practicable after the date of enactment of this Act, the Secretary shall finalize legal descriptions of the public land to be conveyed under this subsection. The Secretary may correct any minor errors in the map referred to in subsection (a)(1) or in the legal descriptions. The map and legal descriptions shall be on file and available for public inspection in appropriate offices of the Bureau of Land Management.

(5) COSTS OF CONVEYANCE- As a condition of conveyance, any costs related to the conveyance under this subsection shall be paid by the PUD.

(6) DISPOSITION OF PROCEEDS- The Secretary shall deposit the proceeds from the sale in the Federal Land Disposal Account established by section 206 of the Federal Land Transaction Facilitation Act (43 U.S.C. 2305) to be expended to improve access to public lands administered by the Bureau of Land Management in the State of Washington.

(c) Segregation of Lands-

(1) WITHDRAWAL- Except as provided in subsection (b)(1), effective immediately upon enactment of this Act, and subject to valid existing rights, the public land is withdrawn from—
(A) all forms of entry, appropriation, or disposal under the public land laws, and all amendments thereto;
(B) location, entry, and patenting under the mining laws, and all amendments thereto; and
(C) operation of the mineral leasing, mineral materials, and geothermal leasing laws, and all amendments thereto.
(2) DURATION- This subsection expires two years after the date of enactment of this Act or on the date of the completion of the conveyance under subsection (b), whichever is earlier.
(d) Retained Authority- The Secretary shall retain the authority to place conditions on the license to insure adequate protection and utilization of the public land granted to the Secretary in section 4(e) of the Federal Power Act (16 U.S.C. 797(e)) until the Federal Energy Regulatory Commission has issued a new license for the Wells Hydroelectric Project, to replace the original license expiring May 31, 2012, consistent with section 15 of the Federal Power Act (16 U.S.C. 808).

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WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT B - PROJECT OPERATIONS AND RESOURCE UTILIZATION

Prepared by:
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May 2010

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EXHIBIT B - PROJECT OPERATIONS AND RESOURCE UTILIZATION

The following excerpt from the Code of Federal Regulations (CFR) at 18 CFR § 4.51 (c) describes the required content of this Exhibit.

Exhibit B is a statement of project operation and resource utilization. If the project includes more than one dam with associated facilities, the information must be provided separately for each such discrete development. The exhibit must contain:

(1) A statement whether operation of the powerplant will be manual or automatic, an estimate of the annual plant factor, and a statement of how the project will be operated during adverse, mean, and high water years;

(2) An estimate of the dependable capacity and average annual energy production in kilowatt-hours (or a mechanical equivalent), supported by the following data:

- *(i) The minimum, mean, and maximum recorded flows in cubic feet per second of the stream or other body of water at the powerplant intake or point of diversion, with a specification of any adjustments made for evaporation, leakage, minimum flow releases (including duration of releases), or other reductions in available flow; monthly flow duration curves indicating the period of record and the gauging stations used in deriving the curves; and a specification of the period of critical streamflow used to determine the dependable capacity;*
- *(ii) An area-capacity curve showing the gross storage capacity and usable storage capacity of the impoundment, with a rule curve showing the proposed operation of the impoundment and how the usable storage capacity is to be utilized;*
- *(iii) The estimated hydraulic capacity of the powerplant (minimum and maximum flow through the powerplant) in cubic feet per second;*
- *(iv) A tailwater rating curve; and*
- *(v) A curve showing powerplant capability versus head and specifying maximum, normal, and minimum heads;*

(3) A statement, with load curves and tabular data, if necessary, of the manner in which the power generated at the project is to be utilized, including the amount of power to be used on-site, if any, the amount of power to be sold, and the identity of any proposed purchasers; and

(4) A statement of the applicant's plans, if any, for future development of the project or of any other existing or proposed water power project on the stream or other body of water, indicating the approximate location and estimated installed capacity of the proposed developments.

1.0 BACKGROUND AND PROJECT PURPOSE

On July 12, 1962, the Federal Power Commission (FPC), predecessor to the Federal Energy Regulatory Commission (FERC), granted the Public Utility District No. 1 of Douglas County, Washington (Douglas PUD) a 50-year license to construct and operate the Wells Hydroelectric Project (Project). This License was issued "for the construction, operation, and maintenance of Project No. 2149 upon the Columbia River, Washington, and affecting tribal lands of the Colville Indian Reservation and other lands and navigable waters of the United States." The initial license for the Project called for the design and installation of seven turbine-generator units. Construction of the Wells Project began in the fall of 1963. On February 2, 1965, the FPC approved Douglas PUD's application to amend the original license to include three additional generating units. Commercial operation of the originally-designed seven-unit Wells Project began on September 1, 1967. The three additional units began commercial operation by January 24, 1969.

In 1982, Douglas PUD received authorization from the FERC to increase its original forebay elevation by 2 feet from elevation 779 to 781 feet. The current configuration of the Wells Project remains as 10 turbine-generator units and a reservoir with a normal maximum pool level of 781 feet. The 10 units have a rated hydraulic capacity of 220 thousand cubic feet per second (kcfs) and the reservoir, within its authorized operating range of 10 feet, has slightly less than 0.1 million acre-feet (MAF) of storage.

The Wells Dam is located at river mile (RM) 515.6 on the Columbia River, approximately 30 RMs downstream of Chief Joseph Dam, owned and operated by the U.S. Army Corps of Engineers (COE), and 42 miles upstream of Rocky Reach Dam, owned and operated by the Public Utility District No. 1 of Chelan County (Chelan PUD).

Douglas PUD utilizes the Wells Project to provide electric service to over 18,000 local customer accounts in Douglas County. In addition to meeting load in Douglas County, the 774.3 megawatt (MW) Project serves an important role in meeting both daily and seasonal peaks in power demand in the Pacific Northwest region and contributes to the reliability and stability of the regional electric system. Through existing power sales agreements, the output from the Wells Project is shared with electric utilities serving the greater Pacific Northwest region and provides essential electric services including on-peak energy generation, load-following and reserves. The Wells Project participates in the Mid-Columbia Hourly Coordination Agreement (HCA), the implementation of which, to a large extent, controls the day-to-day operations of the Wells Project. This Agreement is discussed in detail in Section 2.3 of this Exhibit.

2.0 DESCRIPTION OF THE MID-COLUMBIA HYDROELECTRIC SYSTEM

The Wells Project is a part of the Mid-Columbia River Hydroelectric System, and the Project's current operations can best be understood within the context of the operation of that entire system. In total, seven hydroelectric developments constitute the mid-Columbia system. The furthest upstream facility in this chain is Grand Coulee. With a maximum turbine hydraulic capacity exceeding 280,000 cubic feet per second (cfs) and an active storage volume of 5.2 million acre-feet (MAF), Grand Coulee operations largely define the mid-Columbia River flow regime, and especially the flow regime at the Wells Project.

Just downstream of the Grand Coulee development is the Chief Joseph Hydroelectric Project, with an installed nameplate capacity of 2,069 megawatts (MW) and a turbine hydraulic capacity of about 213,000 cfs. Both Grand Coulee and Chief Joseph are federally-owned facilities, with their power scheduling and daily production being managed by the Bonneville Power Administration (BPA). The Wells Project is located immediately below the Chief Joseph development and flows at Wells are essentially controlled by the discharges from the upstream federal facilities.

2.1 Overview of the Columbia River Basin

The Columbia River originates in Canada, flowing several hundred miles before reaching the United States (U.S.). While in Canada, its flow is highly regulated by dams that provide a substantial amount of water regulation and storage. After the Columbia River enters the U.S., federal dams (Grand Coulee primarily) provide additional year-to-year, seasonal, and daily storage capacity. Several tributary projects also provide seasonal storage capacity in the Columbia River watershed, the most important of which include the federal projects Hungry Horse, Libby, Dworshak, and Albeni Falls, and a non-federal project, Kerr, in Montana.

About 15 percent of the Columbia River watershed and about 25 percent of the total Columbia River annual runoff occurs in Canada. The precipitation in the Columbia River watershed occurs primarily in the winter as snow in the mountains. About 60 percent of the natural runoff in the basin occurs as a result of snowmelt in the months of May, June, and July. The average annual runoff of the Columbia River at the Wells Project is about 82 MAF. The Canadian portion of the basin contributes on average approximately 50 MAF of this annual runoff.

Water storage in the Columbia River watershed occurs at more than 25 individual facilities in Canada and the U.S. The 10 largest of these, including Mica, Keenleyside, and Revelstoke in Canada, and Libby, Hungry Horse, and Grand Coulee in the U.S., contain almost 40 MAF of active storage. The management of this storage capacity has modified the natural hydrograph of the Columbia River (Figure 2.1-1). In contrast, the Wells Project has a usable storage capacity of less than 0.1 MAF, amounting to less than six hours of storage capacity when Chief Joseph is discharging at its turbine capacity. Given this relatively small amount of usable storage, the Wells Project operates as a run-of-river facility.

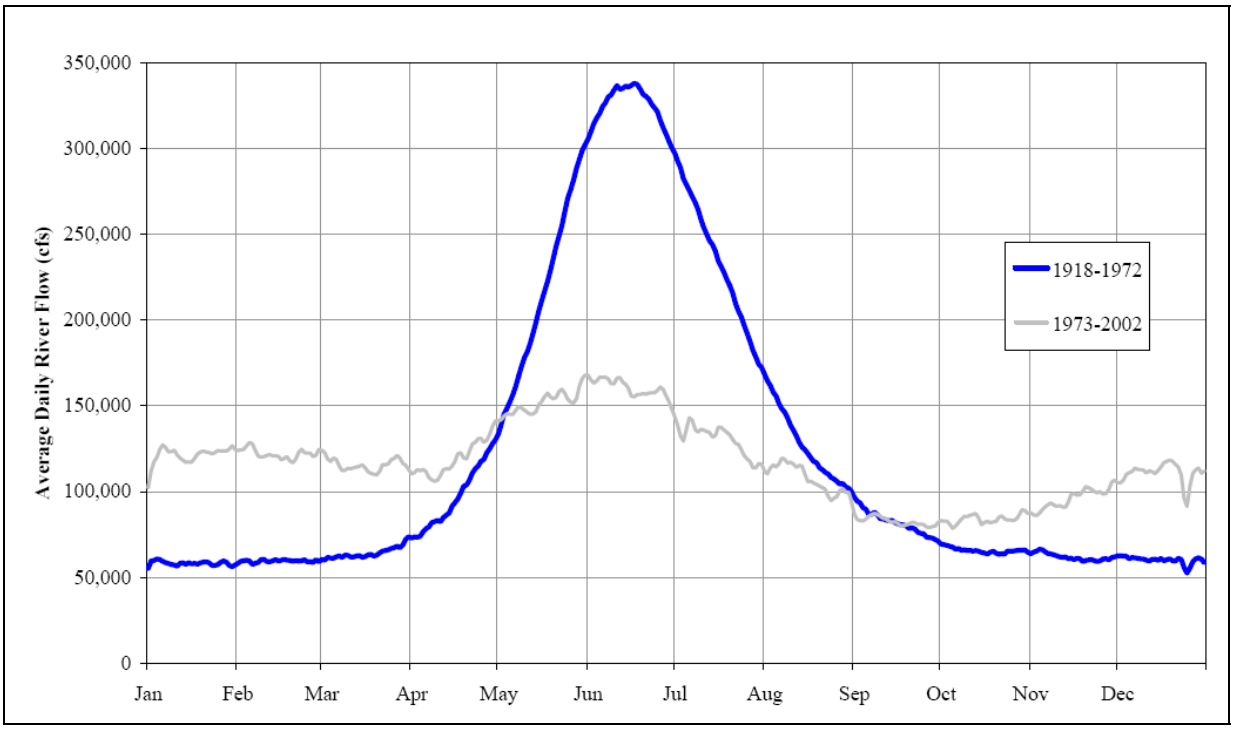

Figure 2.1-1 Hydrographs showing the change in the Columbia River flow regime due to the construction of upstream storage reservoirs.

Source: USGS Gage No. 12472800: Columbia River at Priest Rapids.

2.2 Mid-Columbia Hydroelectric System

The reach of river referred to as the mid-Columbia extends from Grand Coulee Dam to the Hanford Reach, downstream of the Priest Rapids Dam (Figure 2.2-1). As the Columbia River enters the U.S. from Canada, it first flows into the 151-mile-long Lake Roosevelt, formed by Grand Coulee Dam. Starting at Grand Coulee Dam, there are seven hydroelectric facilities within a 200-mile stretch of the Columbia River. From upstream to downstream after Grand Coulee Dam, they are Chief Joseph, Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids. Together, these seven dams make up the Mid-Columbia River Hydroelectric System (Figure 2.2-2).

The ownership, generating capacity, and maximum hydraulic capacity of each of the mid-Columbia Projects is summarized in Table 2.2-1. In total, the mid-Columbia facilities have an installed capacity of slightly more than 13,000 MW.

The seven dam mid-Columbia system contains a significant amount of active storage which serves to enhance the reliability and flexibility of the Northwest's entire electric generation system. Over 90 percent of that usable storage resides at Grand Coulee. Overall, about 90 percent of the annual flow at the Wells Project is provided by controlled releases from Grand Coulee.

Figure 2.2-1 Map of the Mid-Columbia Hydroelectric System.
Source: EPA undated.

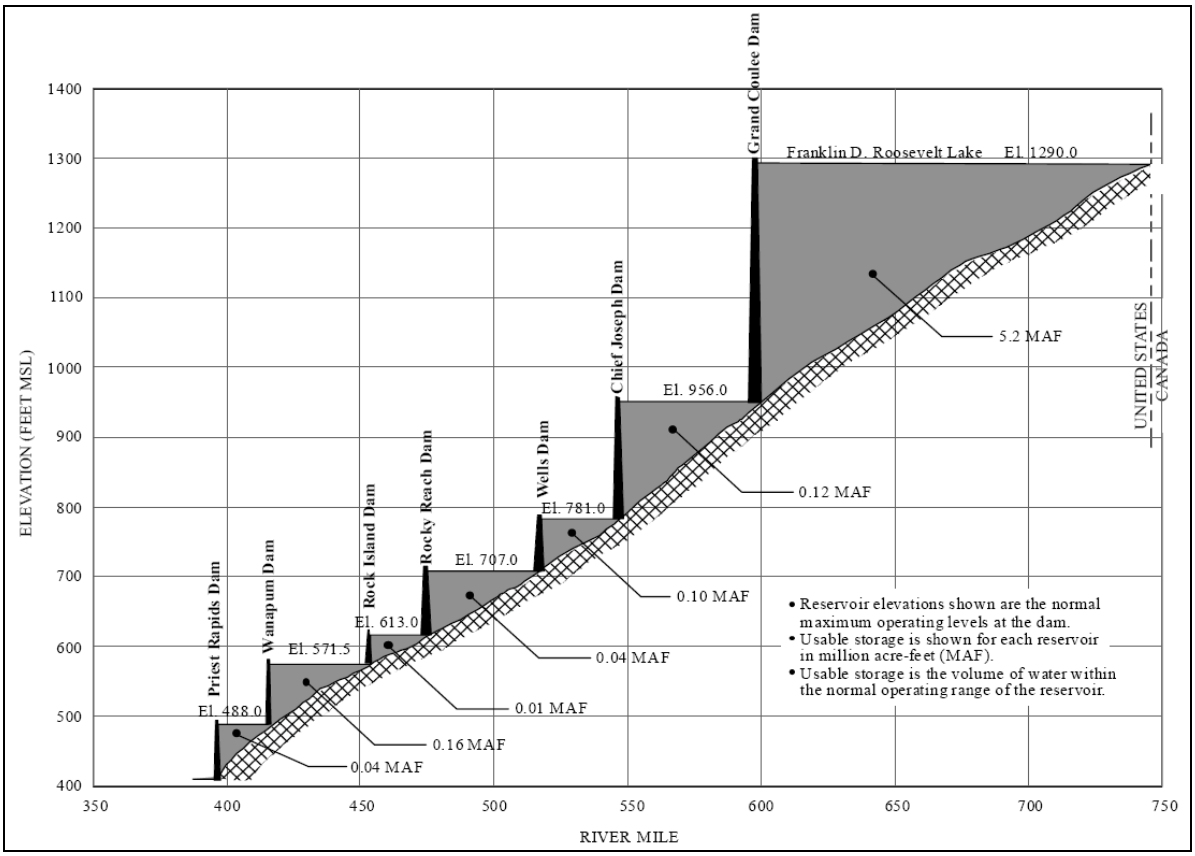

Figure 2.2-2 Mid-Columbia River profile and usable storage volumes.
Source: Grant County PUD 2003.

Table 2.2-1 Summary of hydroelectric projects in the mid-Columbia River system.

Project	Owner	Location (RM)	Drainage Area (mi^2)	Usable Storage[1] (MAF)	Plant Hydraulic Capacity (CFS)	Installed Capacity (MW)
Grand Coulee	BOR	596.6	74,700	5.22	280,000	6,809[2]
Chief Joseph	COE	545.1	75,000	0.12	213,000	2,069[3]
Wells	Douglas PUD	515.6	86,100	0.10	220,000	774.3
Rocky Reach	Chelan PUD	473.7	87,800	0.04	220,000	865.8[4]
Rock Island	Chelan PUD	453.4	89,400	0.01	220,000	623.2[4]
Wanapum	Grant PUD	415.8	90,900	0.16	180,000	1,038[4]
Priest Rapids	Grant PUD	397.1	96,000	0.04	175,000	855[4]

1 Usable storage indicated is the volume of water contained within the normal reservoir operating range.

2 Includes generating capacity of the pump-generator plant.

3 Generator nameplate capacity; from http://chl.erdc.usace.army.mil/chl.aspx?p=s&a=Projects;60. (Accessed June 17, 2009.)

4 FERC-authorized installed capacity; from http://www.ferc.gov/industries/hydropower/gen-info/licensing/licenses.xls. (Accessed May 14, 2009.)

The maximum flow capacity of the turbines at Grand Coulee is also significantly greater than that of the downstream hydroelectric projects (Table 2.2-1). If each project were operated without regard for its effects on downstream projects, inefficiencies would occur. The desire for close coordination of the operations of the mid-Columbia River system has resulted in the development of a sophisticated plan of coordination to optimize the use of water to achieve all of the following purposes:

- **Flood Control** - The severe floods of 1894 and 1948 served as the impetus for construction of major storage projects in the Columbia River basin. Flood control was one of the primary purposes for construction of the major dams on the river, and continues to be a high priority of system operations;
- **Fish Migration** - The mid-Columbia River system is operated to meet a variety of fishery needs, including flow management under the Hanford Reach Fall Chinook Protection Program Agreement and spring and summer flow augmentation to aid the downstream migration of juvenile salmon and steelhead. At the five Public Utility District (PUD) owned dams, fish ladders are operated to facilitate the upstream migration of anadromous fish and bypass systems have been or are being installed to support the downstream migration of juvenile fish;
- **Navigation** - The Columbia River can be navigated by large vessels as far upstream as Richland, Washington, located near the downstream end of the Hanford Reach;
- **Agriculture** - Irrigation is essential to agriculture in the arid regions of central Washington. The Columbia Basin Irrigation Project (CBIP) provides irrigation water to over 600,000 acres of farmland from Ephrata to Pasco, Washington. An average of approximately 2.5 MAF of water is diverted annually upstream of Grand Coulee Dam for use by the CBIP. This water is pumped into Banks Lake from where it is supplied to three irrigation districts through a system of canals, laterals, and re-regulating reservoirs;
- **Recreation** - The mid-Columbia River attracts thousands of boaters, sport anglers, swimmers, hunters, hikers, campers, and sightseers each year;
- **Municipal and Industrial Use** - Maintaining adequate flow and water quality in the Columbia River ensures that it will continue to be a source of high-quality water supply for numerous municipalities and industries;
- **Cultural Resources** - The history of human habitation of the Columbia River basin spans thousands of years and hydro system operations provide for the long-term protection and preservation of significant cultural resources;
- **Thermal Plant Cooling Water** - The Columbia River provides cooling water for the U.S. Department of Energy's Hanford Works located at the downstream end of the Hanford Reach near Richland, Washington. The mid-Columbia hydro system must provide adequate flow to operate the U.S. Department of Energy's Hanford Works; and
- **Power Generation and Regional Electric System Support** - The seven hydroelectric projects in the mid-Columbia system, in addition to meeting a large portion of the region's on-peak electricity demand, also provide other essential ancillary services, especially load-following, spinning reserves, emergency reserve, and transmission system stability and load control.

The mid-Columbia HCA was constituted to coordinate operation of the mid-Columbia River to achieve these goals.

2.3 Hourly Coordination Agreement

In 1972, the owners of the seven dams of the mid-Columbia River system and their power purchasers entered into the Agreement for Hourly Coordination of Projects on the Mid-Columbia River. The agreement calls for a coordinated operation of the seven dams.

The HCA was the result of discussions among all the affected parties. In general, the parties agreed to coordinate the operation of the projects to achieve the following objectives:

1. Coordinate the hydraulic operation of the projects for the purpose of optimizing the amount of energy from the available water consistent with the need to: (1) adjust the total actual generation to match the total requested generation, and (2) operate within all power and non-power requirements;
2. Provide flexibility and coordinated scheduling of project generation through centralized scheduling, and the use of composite scheduling and accounting procedures;
3. Minimize unnecessary changes in project generation to avoid frequent unit starts and stops; and
4. Reduce the amount of fluctuation in river flow that could otherwise occur without such coordination.

A total of 17 utilities receive a share of the output from the mid-Columbia system. The HCA requires that the power and non-power constraints of the individual projects be recognized in the coordination process. A goal of the HCA is to reduce the extent and rate of fluctuations in river levels as flow moves downstream from Grand Coulee to Chief Joseph, and from Chief Joseph Dam to Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids dams.

The HCA was originally signed for a one-year experimental period from July 1, 1972 to June 30, 1973. Twelve parties representing the federal government, the three mid-Columbia PUDs, and all of the power purchasers at that time signed the original agreement. Five one-year agreements were entered into until a 10-year contract was signed on July 1, 1977. At the end of that term, another 10-year contract was signed, extending the arrangement through June 30, 1997. In 1997, a new 20-year renewal agreement was signed extending the term of the agreement through November 1, 2017. Douglas PUD has executed the renewal agreement.

Each day, the non-federal Hourly Coordination participants provide an estimated schedule of desired generation from the lower five projects. The federal project operators provide an estimate of water expected to be discharged from Grand Coulee and Chief Joseph. Central River Control, located in Ephrata, Washington, then determines an estimated operation schedule for the following day based on anticipated flows from the federal projects, reservoir levels, and expected load. Central River Control sends the schedule to each of the five lower projects. Each project then pre-schedules its operation, including hourly generation, for the following day based on Central River Control's estimated operation schedule.

During real-time operation, each non-federal project sends Central River Control an uncoordinated load request signal every four seconds. Based on the sum of these load requests,

Central River Control's computer system determines the allocation of generation required to meet both load demand and non-power constraints for the system. Central River Control operators use power generation characteristics and reservoir target elevations to establish desired generation and discharges. For example, during reverse load factoring (RLF) at Priest Rapids Dam for compliance with the Hanford Reach Fall Chinook Protection Program, maximum and minimum power settings are used to limit flow during the day, and a target elevation is used to lower pool levels and increase flow at night.

More recently, Grand Coulee and Chief Joseph collectively have been providing much of the load-following requirements for the entire federal system in the Pacific Northwest. In 2008, the National Marine Fisheries Service (NMFS) issued its Biological Opinion (BO) for the operation of the Federal Columbia River Power System (FCRPS). Included in this BO were requirements to maintain turbine operations within 1 percent of best efficiency at all lower Columbia and Snake River dams and a 1-foot reservoir level fluctuation limitation for the federal projects on the lower Snake River. This has limited the load-following capability of much of the federal power system resulting in an apparent shift of load-following to Grand Coulee and Chief Joseph, which tends to increase flow fluctuations and decrease flow predictability in the mid-Columbia River.

3.0 CURRENT AND PROPOSED OPERATION OF THE WELLS PROJECT

As described above, the Wells Project operates within the context of the mid-Columbia system. The Wells Project is a "run-of-river" facility in that, on average, daily inflow to the Wells Reservoir equals daily outflow. This run-of-river operation reflects not only the Project's role as part of the mid-Columbia system, but also the very limited usable storage capacity of the Wells Reservoir when compared to the average daily flows being discharged from Chief Joseph and Grand Coulee.

The Wells Project has a water right for 220 kcfs for power production with an impoundment gross storage right of 331,200 ac-ft (97,985 ac-ft is usable storage). The Wells Project is authorized to maintain its reservoir level between elevation 781 and 771 feet for power and non-power purposes. Through the period from 2003 to 2007, the reservoir elevation was maintained at or above 774 feet 99.7 percent of the time. Figure 3.0-1 shows the headwater duration curve for Wells Dam for the period from January 2003 through December 2007. As shown by these data, reservoir fluctuation is less than 2.5 feet about 90 percent of the time and less than 4 feet about 98 percent of the time.

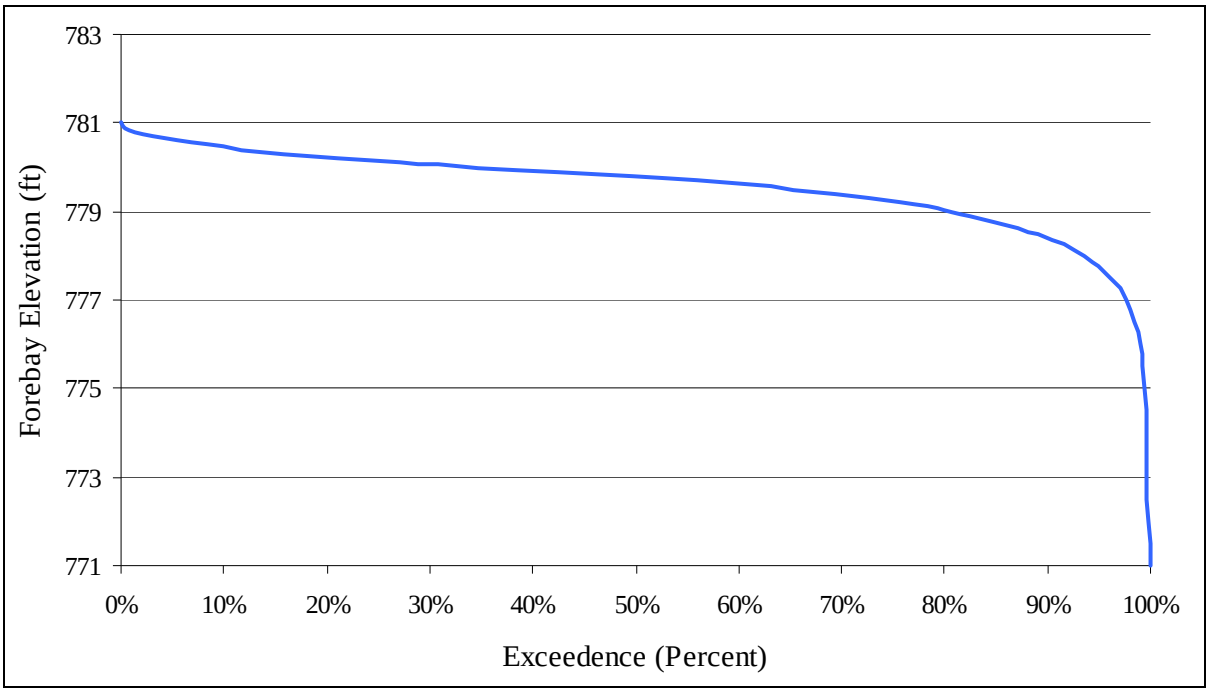

Figure 3.0-1 Headwater duration curve, Wells Forebay (hourly data) 2003-2007.

The daily operation of the Wells Project is influenced by the following factors: (1) FERC license requirements; (2) natural stream flows; (3) regulation of upstream storage reservoirs in the U.S. and Canada; (4) regulation of water releases from upstream power projects on an hourly basis to meet changing power demands; (5) actions in response to fish, wildlife, and other environmental regulations; and (6) variable power demands within Douglas and Okanogan counties and under the long-term power sales contracts with Puget Sound Energy, Inc. (PSE), Portland General Electric Company (PGE), PacifiCorp, and Avista Corporation (collectively, Power Purchasers).

As indicated previously, the Wells Project is operated in a coordinated manner with other regional hydroelectric projects. The management and regulation of upstream reservoirs in the U.S. and Canada affect the amount and timing of flows to the mid-Columbia River. Regulation of the upstream reservoirs in the U.S. and Canada is governed by a number of agreements, including the 1997 Pacific Northwest Coordination Agreement (PNCA), the Columbia River Treaty between the U.S. and Canada relating to the cooperative development of the Columbia River and its tributaries, and numerous other multi-purpose functions authorized by law such as power, flood control, navigation, recreation, and water quality.

The purpose of the PNCA is to optimize the firm load carrying capability of resources coordinated under the agreement, including the Wells Project, and also to produce optimal amounts of usable "secondary" energy from those resources. Importantly, the PNCA also sets forth a procedure approved by FERC for apportioning costs to be borne by the Wells Project for purposes of headwater benefits compensation. This compensation addresses the benefit of improved stream flow regulation provided by the upstream storage reservoirs in the U.S., consistent with Article 47 of the Wells Project license (Appendix B-1).

Douglas PUD is required by Article 38 of the Wells Project license (Appendix B-1) to use the improved stream flow resulting from Canadian storage for power production purposes and to make power available to the federal system for delivery to Canada the Wells Project's share of coordinated system benefits resulting from such improved stream flow. Consistent with this requirement, Douglas PUD entered into agreements in 1964 and again in 1997 with the Bonneville Power Administration (BPA) setting forth the share of Canadian storage benefits to be paid in the form of electricity deliveries by the Wells Project until September 15, 2024.

The construction of the Wells Project increased the tailwater elevation at the federal Chief Joseph Project, reducing the hydraulic head available for its generation. Douglas PUD entered into an agreement in 1968 with the U.S. Army Corps of Engineers (COE) to compensate the federal system for power loss due to Wells Project encroachment (Encroachment Agreement, 1968), consistent with Article 32 of the Wells Project license (Appendix B-1). The agreement was supplemented in 1982 when FERC approved raising the normal maximum elevation of the Wells Reservoir from elevation 779 to 781 feet (Supplement Agreement 1982).

Additional agreements affecting operation of the Wells Project include an approved Anadromous Fish Agreement and Habitat Conservation Plan (Wells HCP; Exhibit E; Appendix E-1), the Hanford Reach Fall Chinook Protection Program Agreement (submitted to FERC by Public Utility District Number 2 of Grant County, Washington [Grant PUD] on April 19, 2004 and approved in April 2008), and a number of other relevant agreements, all described in Section 3.1.

3.1 Agreements Affecting Current Project Operations

3.1.1 Anadromous Fish Agreement and Habitat Conservation Plan (2004)

On June 21, 2004, FERC approved the Wells HCP. The Wells HCP represents the culmination of over 10 years of negotiations. Entities that have signed the Wells HCP (HCP Signatory Parties) include NMFS, U.S. Fish and Wildlife Service (USFWS), Washington Department of Fish and Wildlife (WDFW), the Confederated Tribes of the Colville Reservation (CCT), the Confederated Tribes and Bands of the Yakama Nation (YN), the Power Purchasers (PSE, PGE, PacifiCorp, and Avista Corporation), and Douglas PUD. The Wells HCP is the first hydropower HCP in the nation for anadromous salmon and steelhead. The Wells HCP is a 50-year agreement that FERC approved as an amendment to the Wells Project license in 2004. The Wells HCP addresses all Project-related impacts to spring Chinook, summer/fall Chinook, steelhead, sockeye, and coho, collectively referred to as Plan Species. With respect to Plan Species, the HCP Signatory Parties have agreed to be supportive of Douglas PUD's long term license application(s) to the FERC, filed during the term of the Wells HCP. The Wells HCP also provides Endangered Species Act (ESA) coverage for all of the incidental take permit species (spring Chinook, summer/fall Chinook, sockeye, and steelhead) and is intended to constitute the HCP Signatory Parties' terms, conditions, and recommendations for Plan Species under Sections 10(a), 10(j), and 18 of the Federal Power Act (FPA), the Fish and Wildlife Coordination Act, the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act, the Pacific Northwest Electric Power Planning and Conservation Act, and Title 77 of the Revised Code of Washington (RCW).

3.1.2 Power Loss from Wells Project Encroachment on Chief Joseph Dam (1968)

On August 26, 1968, Douglas PUD and COE entered into an agreement for power loss from Wells Project Encroachment on Chief Joseph Dam (Encroachment Agreement). The Encroachment Agreement compensated the federal government for the encroachment of the Wells Project on the tailwater of Chief Joseph Dam. The term of the Encroachment Agreement extends for the duration of the Wells Project license (May 31, 2012). The agreement was supplemented on September 27, 1982 when FERC approved raising the elevation of the Wells Reservoir from elevation 779 to 781 feet. Power losses from encroachment are calculated on an hourly basis and transferred to the federal system. Over the period 2002 through 2006, this amounted to approximately 8 percent of the annual average output of the Wells Project.

3.1.3 Settlement Agreement with the Colville Confederated Tribes (2005)

On November 1, 2004, Douglas PUD and the CCT executed a Settlement Agreement to resolve all claims regarding any Section 10(e) payments to the CCT for the term of the original license and any new FERC license arising from the use of lands within the Wells Project Boundary. Pursuant to the Settlement Agreement, Douglas PUD and the CCT also executed a Power Sales Contract (CCT Power Sales Contract) and a Power Sales Service Agreement. Beginning April 1, 2005, Douglas PUD is obligated to offer to the CCT 4.5 percent of the output of the Wells Project through August 31, 2018, and 5.5 percent thereafter, at the cost of production, for so long as Douglas PUD holds a license for the Wells Project.

On November 23, 2004, Douglas PUD, the CCT and the Power Purchasers filed a request with FERC for approval of: (1) the Settlement Agreement resolving all claims involving annual charges for the use of Indian lands for the Wells Project, and (2) the CCT Power Sales Contract that extends beyond the license term pursuant to Section 22 of the FPA. On February 11, 2005, FERC issued an order approving the Settlement Agreement, amending the license and approving the CCT Power Sales Contract for the period extending through the term of any new license issued upon expiration of the existing license. Article 46 was amended to provide that compensation to the CCT pursuant to the terms of the Settlement Agreement and the CCT Power Sales Contract constitutes payment in full for the Project's use of tribal lands within the Colville Reservation. In addition, the order provides that for the purposes of any new license issued upon expiration of the existing license, all annual charges under Section 10(e) of the FPA that accrue during the term of the new license for the use of tribal lands, to the extent such lands were included in the Wells Project Boundary on the effective date of the Settlement Agreement, shall be deemed satisfied by fulfillment of the applicable terms of the Settlement Agreement and the CCT Power Sales Contract.

3.1.4 Canadian Entitlement Allocation Extension Agreement (1997)

On April 7, 1997, Douglas PUD entered into the Canadian Entitlement Allocation Extension Agreement with the BPA. This agreement defined the portion of Canadian Entitlement allocated to the Wells Project through 2024, which is the minimum remaining term of The Columbia River Treaty. The Columbia River Treaty between the U.S. and Canada was signed in 1961 to help ensure the cooperative development of the Columbia River basin by regulating seasonal flows

that enable downstream projects to produce additional power. Since the Wells Project benefits from the storage dams and improved stream flow authorized under The Columbia River Treaty, compensation in the form of capacity and energy is made to Canada. The Canadian Entitlement Allocation Extension Agreement is a successor of the original agreement, entered into in 1964.

3.1.5 Pacific Northwest Coordination Agreement (1997)

On April 7, 1997, Douglas PUD entered into the 1997 PNCA between and among numerous federal agencies and northwest utilities. Operations under this agreement began on August 1, 2003, and its term extends until September 15, 2024. The 1997 PNCA helps manage reservoir systems by maintaining the independence of each hydroelectric facility while achieving maximum beneficial use of the river. The various projects work cooperatively toward meeting overall load requirements by mutually supporting each other's operations. The 1997 PNCA maintains the efficient use of water by recognizing and integrating both non-power and power requirements as water travels downstream. The 1997 PNCA is a successor to the PNCA that Douglas PUD entered into in 1964.

3.1.6 Power Sales Contracts With Power Purchasers

Douglas PUD has executed contracts with the Power Purchasers (Power Sales Contracts) for the sale of 62 percent of Wells Project Output (Table 3.1-1).

Table 3.1-1 Power Purchasers for the Wells Project.

Power Purchaser	Contractual Right	Expiration
Colville Confederated Tribes	4.5%/5.5%[1]	Through August 31, 2018/September 1, 2018 – life of Project under District license[2]
Okanogan PUD	8%[3] + surplus	Through August 31, 2018[4]
PSE	31.3 percent[3]	Through August 31, 2018[4]
PGE	20.3 percent[3]	Through August 31, 2018[4]
PacifiCorp	6.9 percent[3]	Through August 31, 2018[4]
Avista (Coral Energy)	3.5 percent[3]	Through August 31, 2018[4]

[1] of the output from the Wells Project at the full cost of production.

[2] The proportion of output the CCT are entitled to purchase at cost is currently 4.5 percent through August 2018 when it will increase to 5.5 percent.

[3] of the output of the Wells Project, less the amount purchased by the CCT, at the full cost of production.

[4] or such later date as all bonds pertaining to the original construction financing are paid in full.

In 2005, Douglas PUD entered into a settlement with the CCT (CCT Power Sales Contract) pursuant to which Douglas PUD is obligated to sell to the CCT 4.5 percent of the output of the Wells Project through August 31, 2018, and 5.5 percent thereafter. The CCT Power Sales Contract reduces the amount of energy available to Douglas PUD and the Power Purchasers pro rata. Unlike the other purchasers, the CCT are not obligated to pay if the Wells Project is not operating or operable.

During each contract year, each Power Purchaser is obligated to pay its share of the Wells Project annual power costs. Annual power costs for each contract year are estimated in advance

and are payable on a monthly basis. The Power Sales Contracts state that such payments are to be made whether or not the Wells Project is then operable or operating.

On January 17, 1997, FERC issued an order granting approval of the Power Sales Contracts under Section 22 of the FPA. The Power Sales Contracts extend beyond the term of the current Wells License.

3.1.7 Power Sales Contract and Memorandum of Understanding with Okanogan PUD

Okanogan PUD and Douglas PUD entered into a Memorandum of Understanding (MOU) dated August 5, 1991 under which "Beginning September 1, 2018, Douglas will make available to Okanogan from its ninety two percent of the output of the Project an additional twenty two percent of the output of the Project" subject to numerous provisions such as Douglas successfully relicensing the Project and compliance with Sec. 3 (b) of each September 18, 1963 Power Sales Contract between Douglas and each of the four Wells Power Purchasers. This twenty two percent will be in addition to the 8% specified in Sec. 4 (b) of the 1963 Power Sales Contract between the two entities.

3.1.8 Settlement Agreement with Wells Project Power Purchasers (1989)

On May 15, 1989, Douglas PUD entered into a settlement agreement with its four Power Purchasers. This agreement was negotiated to settle an arbitration relating to the sale of Wells Project output. The agreement is effective through August 31, 2018. Under the agreement, Douglas PUD must offer certain temporarily-available, non-firm energy to the Power Purchasers under pricing structures which are subject to annual adjustments. Pursuant to the agreement, power returned to Douglas PUD under a 1983 supplemental agreement with Okanogan PUD was returned to the Power Purchasers except for power needed for Douglas PUD's load. Power actually returned to the Power Purchasers was subsequently withdrawn by Douglas PUD in accordance with the terms of the agreement.

3.1.9 Vernita Bar Settlement Agreement (1988) and Hanford Reach Fall Chinook Protection Program Agreement (2004)

On February 16, 1988, Douglas PUD entered into the Vernita Bar Settlement Agreement between and among Grant PUD, Chelan PUD, BPA, NMFS, WDFW, CCT, YN, the Confederated Tribes of the Umatilla Indian Reservation (CUR), and the Oregon Department of Fish and Wildlife (ODFW). The agreement resulted from extensive negotiations with the aforementioned agencies and tribes in an effort to protect salmon spawning on the Vernita Bar in the Columbia River downstream of the Priest Rapids Project. The agreement attempts to achieve an appropriate balance between power production and the protection of fall Chinook salmon by identifying certain minimum flows to be maintained below Priest Rapids Dam during adult spawning, incubation, and emergence. The term of the Vernita Bar Settlement Agreement was the duration of the current license period for the Priest Rapids Project plus the term(s) of any annual license(s) issued thereafter.

The successor agreement to the Vernita Bar Agreement, the Hanford Reach Fall Chinook Protection Program Agreement, was submitted to FERC by Grant PUD on April 19, 2004 and approved in April, 2008. The parties to this agreement include Grant PUD, Chelan PUD, Douglas PUD, NMFS, USFWS, WDFW, CCT, YN, and the BPA. The agreement is designed to extend until the end of the new license term for the Priest Rapids Project. It sets forth the obligations of the three PUDs and BPA related to protection of fall Chinook salmon spawning, rearing, and outmigration in the Hanford Reach of the mid-Columbia River. The Wells Project is the uppermost non-federal project participating in these agreements.

3.1.10 Memorandum of Agreement - Cultural Resources Management Program (1983)

On April 11, 1983, Douglas PUD entered into a Memorandum of Agreement (MOA) with the Washington State Office of Archaeology and Historic Preservation (renamed the Department of Archaeology and Historic Preservation [DAHP] in 2005). The MOA was developed in conjunction with Douglas PUD's application for amendment to the Wells Project license to raise the elevation of the Wells Reservoir. The MOA defined a data recovery plan in accordance with the guidelines of the Advisory Council on Historic Preservation (ACHP), including the curation of artifacts. It also addresses the physical recovery and monitoring of any archaeology sites uncovered by future erosion. On August 16, 2004, Douglas PUD entered into a Memorandum of Understanding (MOU) for Curatorial Services with the CCT to formalize its current curatorial activities. The MOU satisfies the obligations established in the 1983 MOA. The MOU will remain in effect until the expiration of the current FERC license, May 31, 2012, unless terminated sooner in accordance with provisions of the agreement.

3.1.11 Hanford Minimum Flows Operational Consistency with Priest Rapids Article 45

Article 33 of the FERC license prohibits the operation of the Wells Project in such a way as would prevent the licensee of the downstream Priest Rapids Project from meeting its obligation to provide a minimum flow of 36 kcfs to the Hanford Works of the U.S. Department of Energy, located at the downstream end of the Hanford Reach. Meeting this requirement is part of the planning and flow management provisions of the mid-Columbia HCA.

3.1.12 Lost Valley Storage Replacement

Article 34 of the FERC license requires that each year, before the beginning of the flood runoff, the District Engineer of the COE in charge of the locality shall inform Douglas PUD of the storage space to be provided in the Wells Project reservoir to compensate approximately for valley storage that may be expected to be lost during the ensuing flood season. Douglas PUD, without cost to the U.S., must provide this storage space in accordance with specific procedures.

3.1.13 Measures Related to the Two-Foot Pool Raise

On April 26, 1981, Douglas PUD filed an application for a license amendment to raise the elevation of the Wells Reservoir from 779 to 781 feet. On September 3, 1982, the FERC issued

an order amending the license and added 10 license articles (Articles 49 through 58) as part of its order. These articles included measures to protect cultural resources and recreation facilities, improve wildlife management facilities, compensate the COE for lost generation of Chief Joseph Dam, and undertake various Project safety reviews. Douglas PUD will be maintaining the current normal maximum pool elevation of 781 feet as approved by the September 23, 1982 order, and will continue compliance with the relevant articles of the current license.

3.2 Proposed Future Project Operations

Due to the interconnected nature of the seven-dam mid-Columbia River system, and in consideration of the numerous settlements and agreements already in place that will affect the future operations of the Wells Project, Douglas PUD is not proposing any substantial change to the operations of the Wells Project. In addition to previously-described settlements and agreements which are expected to continue into the next license, the Aquatic Settlement Agreement (Exhibit E; Appendix E-2) and relicensing management plans are being submitted to the FERC as part of the application for a new license for the Wells Project. The proposed Aquatic Settlement Agreement and relicensing management plans will not result in any changes in generation or reservoir operations at the Wells Project.

3.2.1 Aquatic Settlement Agreement

On January 19, 2009, Douglas PUD executed a settlement agreement related to aquatic resources found within the Wells Project (Exhibit E; Appendix E-2). Entities that have signed the Aquatic Settlement include WDFW, Washington Department of Ecology (Ecology), CCT, YN, USFWS, US Bureau of Land Management and Douglas PUD (Aquatic Settlement Parties). The Aquatic Settlement has been included in Douglas PUD's license application. The Aquatic Settlement Agreement is designed to address potential Project-related impacts to white sturgeon, bull trout, Pacific lamprey, resident fish, aquatic nuisance species, and water quality resources. The agreement is intended to resolve all remaining aquatic resource issues related to compliance with all federal and state laws applicable to the issuance of a new operating license for the Wells Project.

The Aquatic Settlement Parties have agreed to support a 50-year term for the new operating license. The measures contained within the agreement will be implemented upon FERC's issuance of the new operating license.

3.2.2 Wildlife and Botanical Management Plan

The Wildlife and Botanical Management Plan (WBMP; Exhibit E; Appendix E-3) will guide implementation of resource protection measures for wildlife and botanical resources during the term of the new license. Douglas PUD developed the WBMP in collaboration with the Terrestrial Resources Work Group (RWG), which included representatives from USFWS, WDFW, CCT, U.S. Bureau of Land Management (BLM), and Douglas PUD. The goal of the Wildlife and Botanical Management Plan is to protect, maintain and enhance wildlife and wildlife habitat on Project lands commensurate with ongoing effects of operating the Wells Project. The plan is also intended to guide wildlife management activities and to protect rare,

threatened and endangered (RTE) wildlife and plant species on Project lands during the term of the new license for the Wells Project.

The objectives of the WBMP are to: (1) protect and enhance RTE wildlife species' habitat on Wells Project lands; (2) protect RTE botanical species from land disturbing activities and herbicide sprays.; (3) conserve habitat for species on Wells Project lands protected by the federal Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act; (4) protect native habitat on Wells Project lands ; (5) maintain productive wildlife habitat on the Cassimer Bar Wildlife Management Area; (6) control noxious weeds on Wells Project lands; and (7) provide for future consultation.

3.2.3 Avian Protection Plan

The goal of the Wells 230 kV Transmission Line Corridor Avian Protection Plan (APP; Exhibit E; Appendix E-6) is to protect resident and migrant birds that interact with the Wells 230 kV transmission lines. Douglas PUD is committed to maintaining the reliability of the transmission lines while meeting the regulatory requirements to conserve migratory species, RTE species, and raptors. The APP is intended to protect resident and migrant birds that interact with the Wells 230 kV transmission lines. Douglas PUD prepared the APP in consultation with the USFWS and WDFW. The APP establishes specific protocols for nest management, timing of tree removal, training of Douglas PUD personnel, reporting, and future consultation with the USFWS and WDFW.

3.2.4 Historic Properties Management Plan

The Historic Properties Management Plan (HPMP; Exhibit E; Appendix E-4) was developed to guide Douglas PUD in protecting historic properties within the Wells Project area of potential effects (APE) during the term of the new FERC license. The HPMP was developed by Douglas PUD in consultation with the Cultural RWG, which included the Washington State Historic Preservation Officer (SHPO), the Tribal Historic Preservation Officer (THPO) of the CCT, the FERC, BLM and the Bureau of Indian Affairs (BIA).

The purpose of the HPMP is to provide guidelines to Douglas PUD for managing historic properties affected by the operation and maintenance of the Wells Project and complying with the National Historic Preservation Act (NHPA) during the term of the new license. The HPMP includes protocols for achieving NHPA compliance through protection of historic properties and consultation with the SHPO, THPO, and other interested parties.

3.2.5 Recreation Management Plan

The Recreation Management Plan (RMP; Exhibit E; Appendix E-5) describes Douglas PUD's plans for operations and maintenance, design, and continued development of recreation facilities within the Wells Project Boundary. The goal of the RMP is to provide recreational opportunities at the Wells Project throughout the term of the new license in accordance with relevant FERC requirements and the needs of the Project. The RMP provides guidance for addressing current recreational uses and opportunities within the Wells Project Boundary and provides a process for

identifying changing needs and uses over time for future enhancement of the public's use and enjoyment of the recreational resources associated with the Wells Project.

Measures proposed within the RMP are based on the recreational resources currently available at the Project as well as statewide and regional recreation use trends identified through studies conducted as part of the Wells Integrated Licensing Process (ILP). Proposed measures are defined within two programs that would be implemented within the Wells Project Boundary. The measures included in the RMP are: (1) the Recreation Facility Improvement Program; (2) the Recreation Facility Operation, Maintenance and Monitoring Program.

Douglas PUD has entered into relicensing agreements with the cities of Pateros, Brewster and Bridgeport. These agreements cover operation and maintenance of Project recreation facilities. In exchange for the commitments made by Douglas PUD in these agreements, the cities have agreed to support Douglas PUD's application for a new 50-year license for the Wells Project.

3.2.6 Douglas PUD Land Use Policy

Douglas PUD is responsible for land use and shoreline management within the Wells Project Boundary. The waters and shoreline features of the Wells Project provide important habitat for many species of fish, wildlife and plants. Multiple resource management plans, including the Wells HCP, WBMP, HPMP and RMP, contain relevant guidance related to land use and shoreline management. Douglas PUD's Land Use Policy guides the management and protection of all Wells Project lands. The goal of Douglas PUD's Land Use Policy is to integrate the various resource concerns affecting shoreline uses including compliance with the FERC license for the Wells Project, Wells HCP, and all required permits from federal, state, and local jurisdictions.

An important feature of Douglas PUD's Land Use Policy is a prohibition on new docks and piers outside the city limits of Pateros, Brewster, and Bridgeport. This restriction is implemented to facilitate attainment of the Wells HCP's No-Net-Impact (NNI) standard for Plan Species.

3.3 Day-to-Day Plant Operations and Control

The Wells Project currently operates via an automatic generation control set-point signal from the Supervisory Control and Data Acquisition system located in Douglas PUD's System Operations Center in East Wenatchee, Washington. This signal is based on the predicted generation needed at the Wells Project and is coordinated with the needs of the six other hydro projects on the mid-Columbia River. This set-point signal is dynamic (4-second cycle time) and establishes the expected generation of the Wells Project including losses. The signal is used to drive the Wells Project Load Controller. The Load Controller maintains a portion of the total set-point generation on each generating unit that is assigned to it for control. A unit is said to be on joint load control if it is controlled by the Load Controller. A unit may be online and loaded to an assigned static generation level if it is not on joint load control. The plant operator is responsible for determining when to bring additional units online and which units should be dedicated to joint load control. When units are on joint load control, their output is automatically

controlled to maintain the set-point for the entire plant in addition to any units that may be on-line but not on joint load control. The local plant operator must start and stop units.

Douglas PUD is proposing to continue this form of plant operation throughout the foreseeable future. The Mid-Columbia HCA extends through at least 2017.

3.3.1 Operations During Normal, Dry, and Wet Years

As indicated previously in this Exhibit, the Wells Project operates within a complex framework of long-term, annual, and weekly/daily planning to meet both power and non-power requirements. The substantial and continuous planning done under the auspices of the PNCA for the entire Pacific Northwest prepares individual project owners for operations during normal, wet, and dry years. Wells Project operations in all years are dependent on the amount and timing of flows released from Grand Coulee and Chief Joseph, the two federally-owned facilities above Wells.

Typical operations of Grand Coulee, Chief Joseph, and the Wells Project during normal (1998), wet (1997), and dry (2001) years are depicted in the Figures 3.3-1 through 3.3-18. These plots demonstrate the high degree of influence exerted by the upstream federal projects on the flows at the Wells Project. Also evident is the influence the discharge from Chief Joseph can exert on the pool level in the Wells Reservoir. Flows from Chief Joseph, as shown in the figures, change dramatically over short time periods. Much of the time these changes are unscheduled. Wells Project operations must react to these rapid changes in flow, while trying to maintain commitments made under the HCA with Chelan PUD and Grant PUD. Fluctuations in the Wells Reservoir are essential to managing these rapid changes in incoming flows. Even when these rapid changes in flow are anticipated, the Wells Reservoir must absorb the pulses while maintaining control of the Wells Project output.

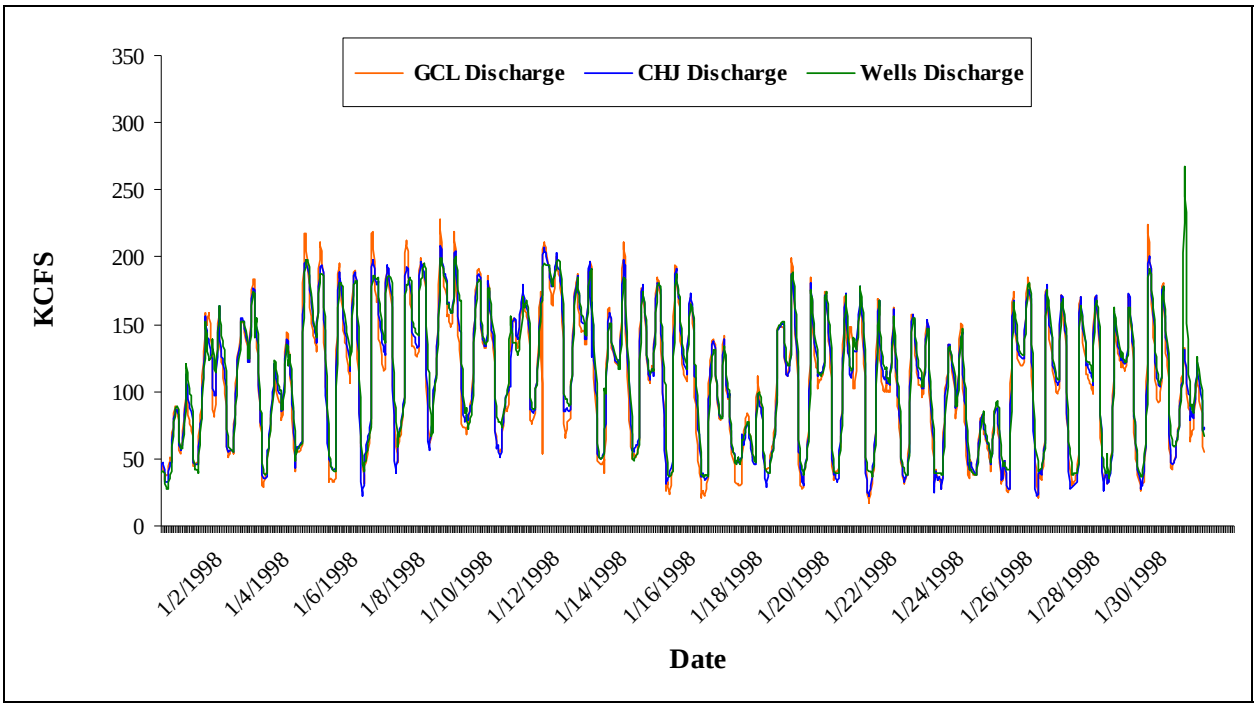

Figure 3.3-1 **Discharge from Grand Coulee, Chief Joseph, and Wells during January 1998 (normal year).**

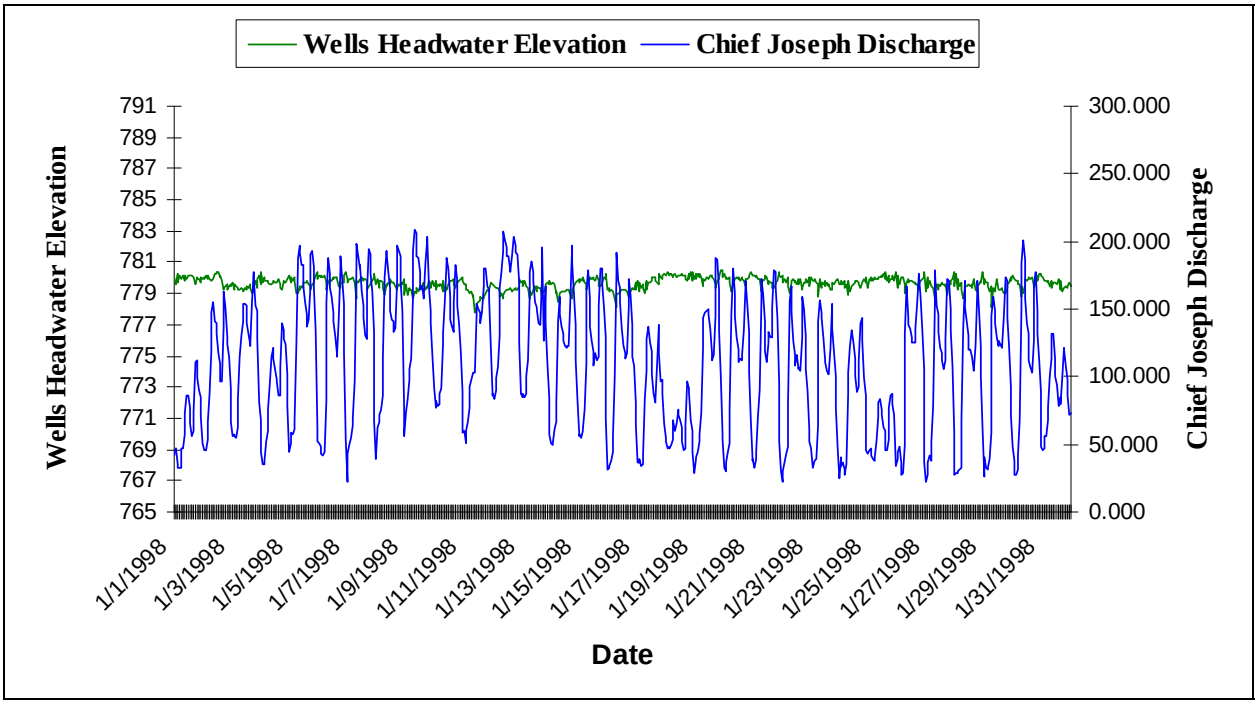

Figure 3.3-2 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during January 1998 (normal year).**

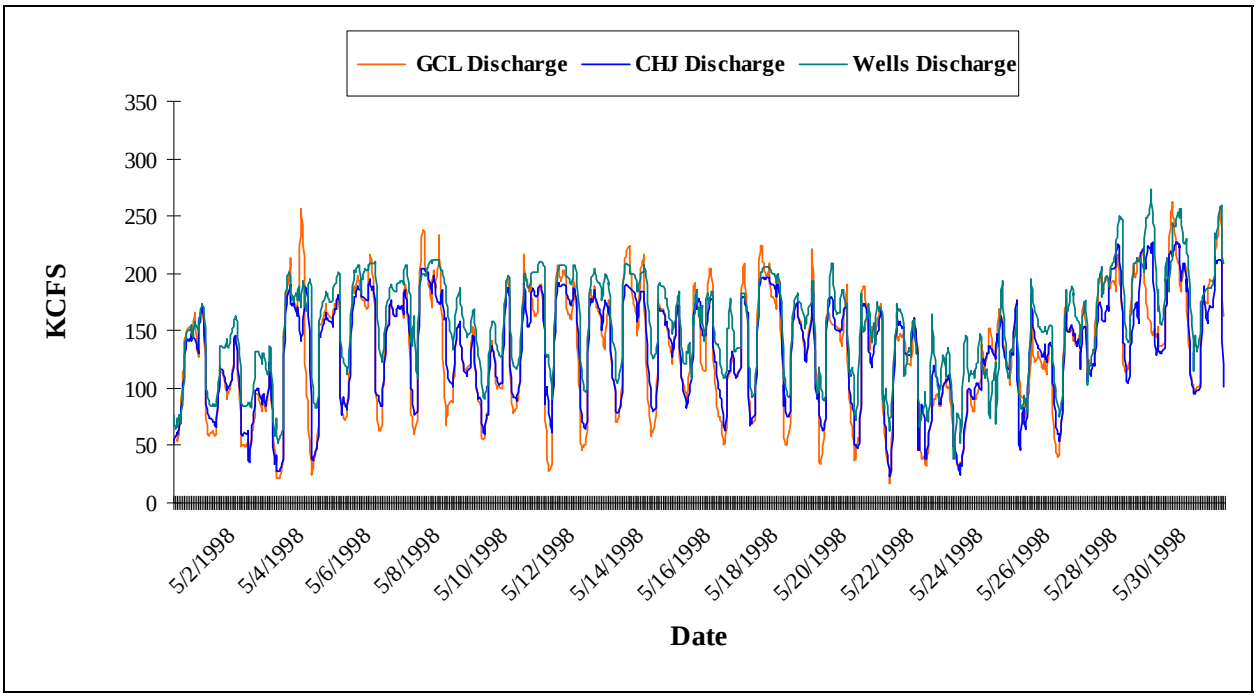

Figure 3.3-3 **Discharge from Grand Coulee, Chief Joseph, and Wells during May 1998 (normal year).**

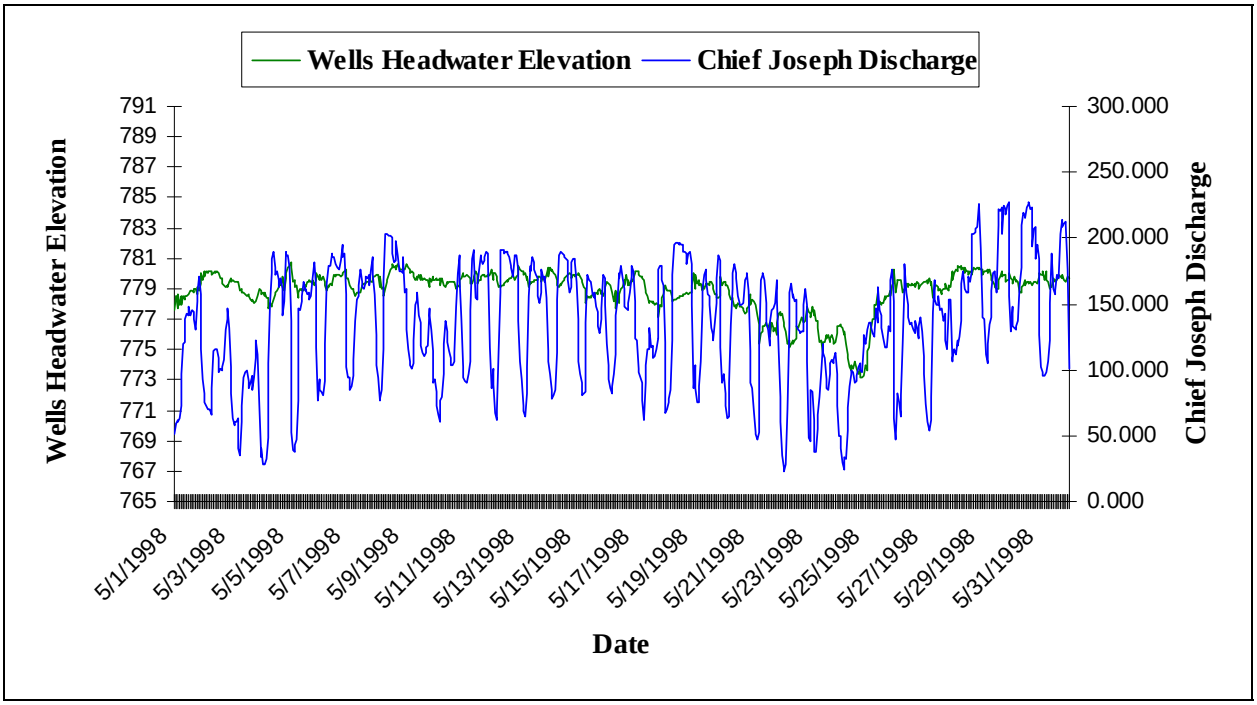

Figure 3.3-4 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during May 1998 (normal year).**

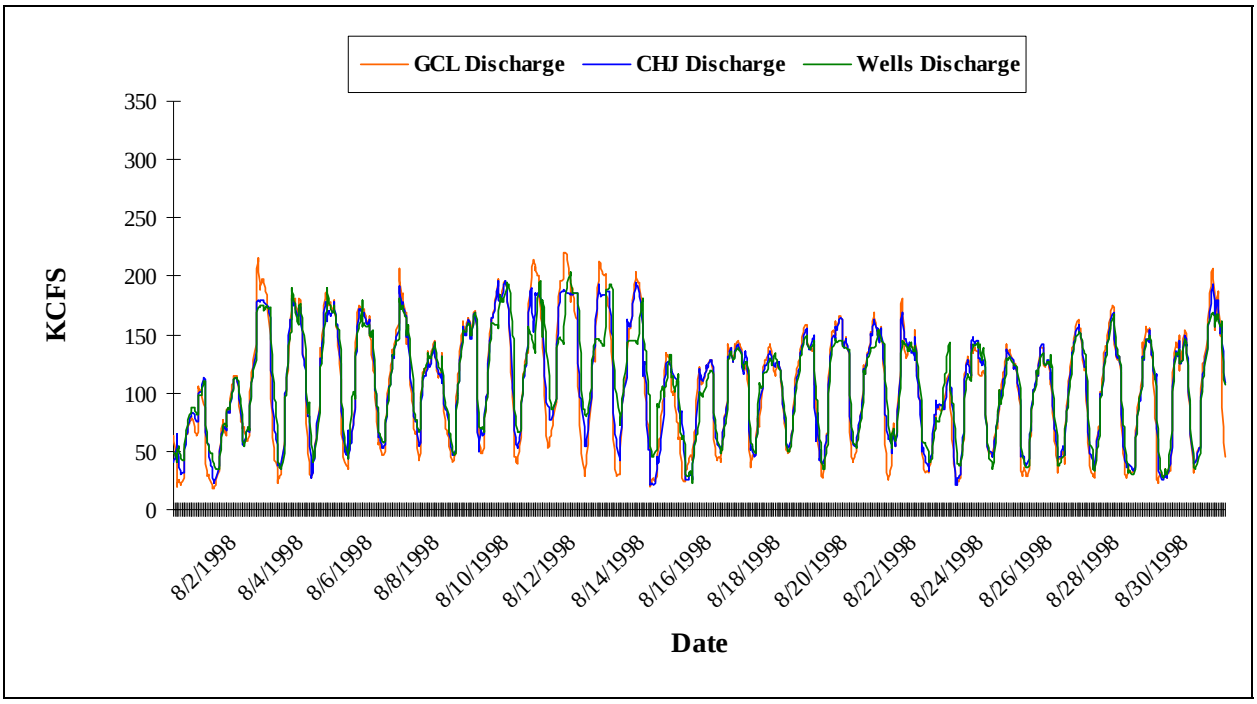

Figure 3.3-5 **Discharge from Grand Coulee, Chief Joseph, and Wells during August 1998 (normal year).**

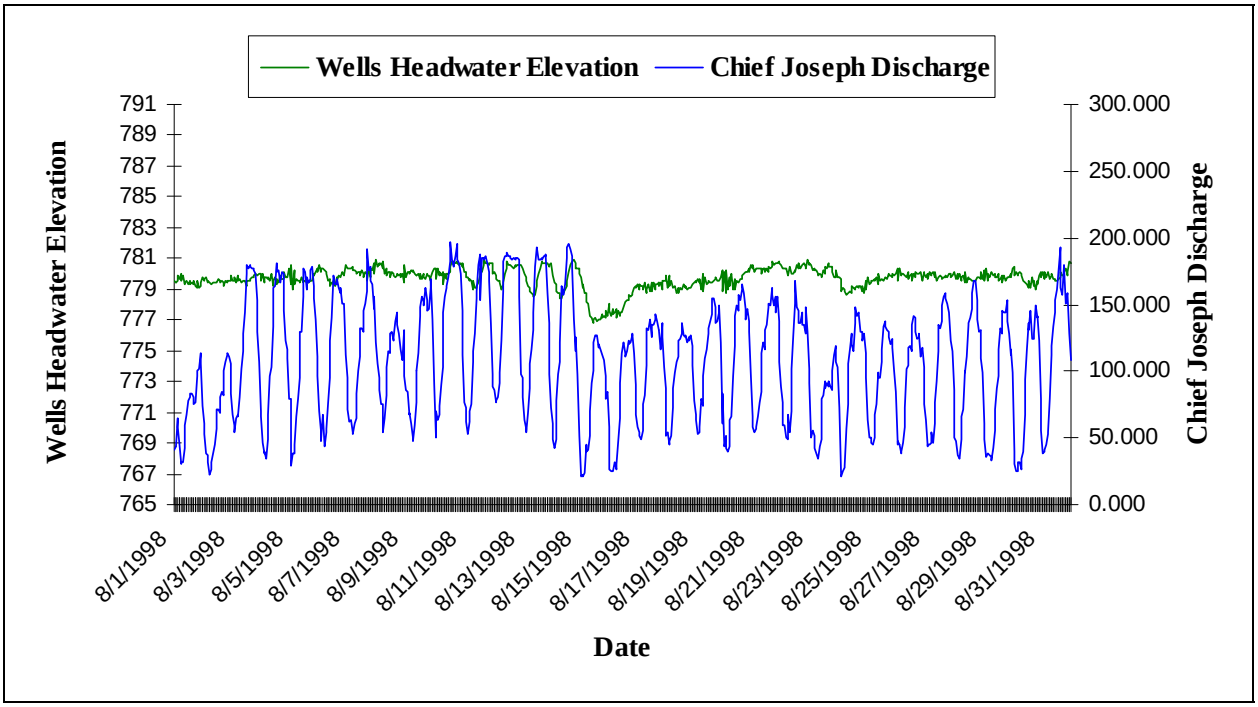

Figure 3.3-6 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during August 1998 (normal year).**

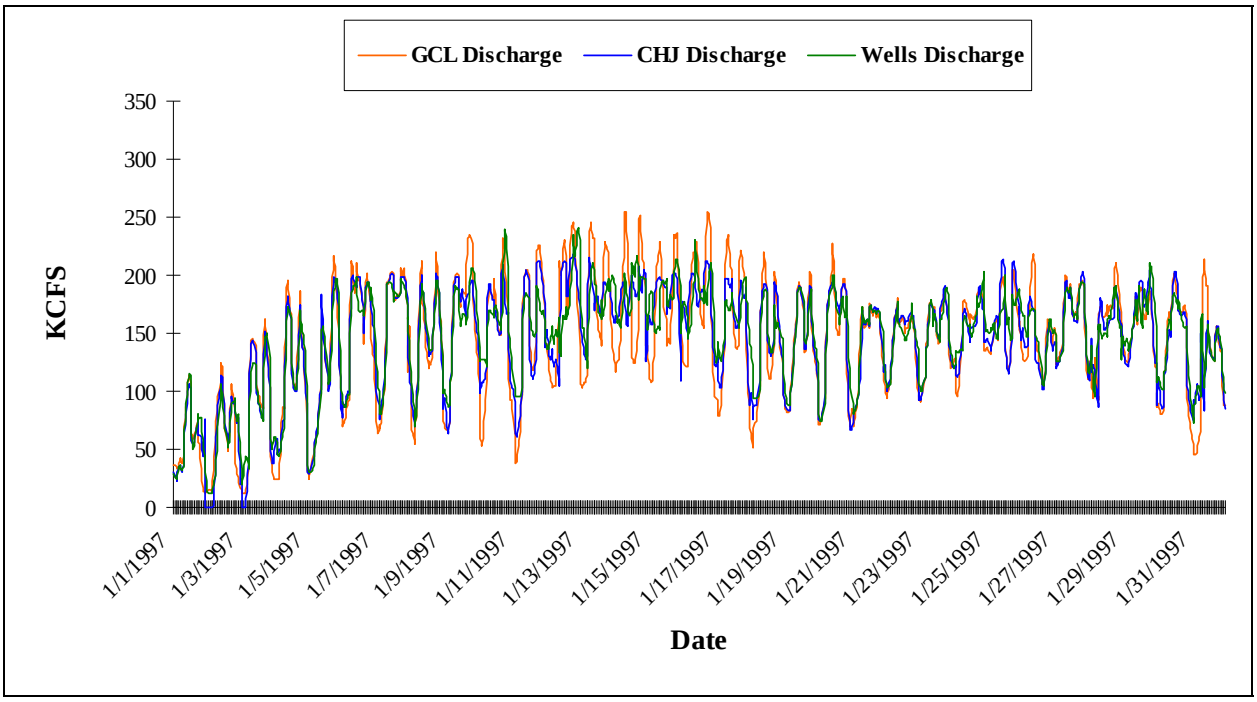

Figure 3.3-7 **Discharge from Grand Coulee, Chief Joseph, and Wells during January 1997 (wet year).**

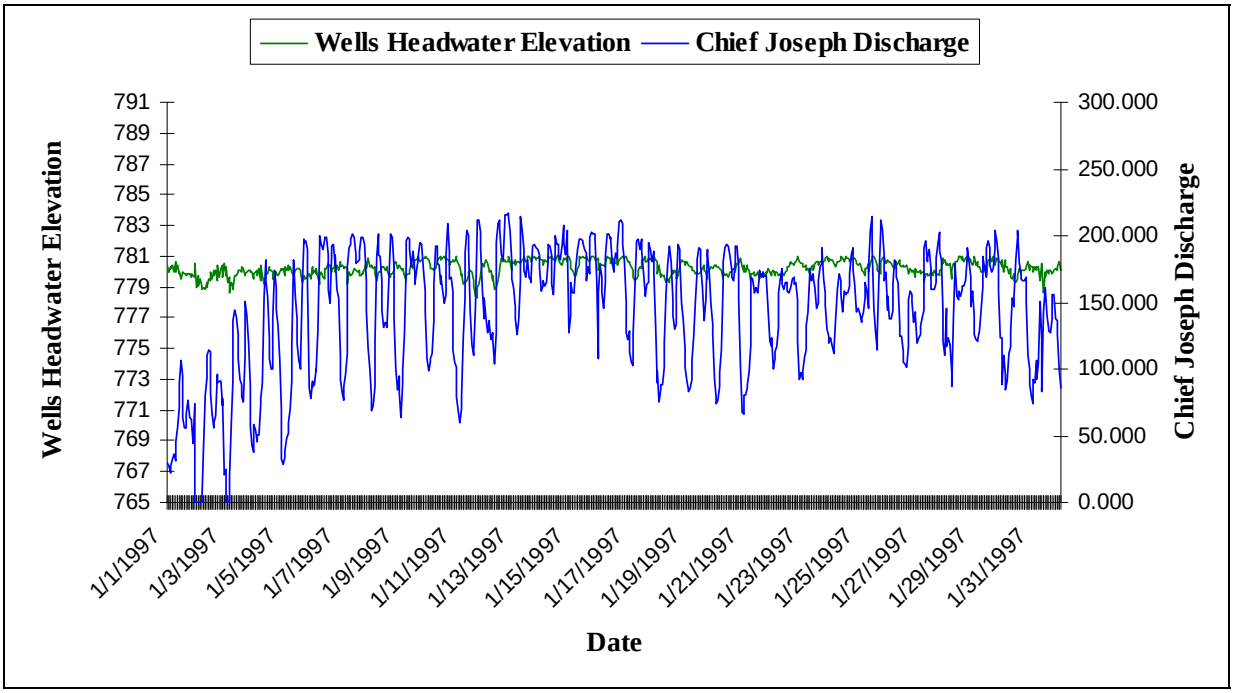

Figure 3.3-8 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during January 1997 (wet year).**

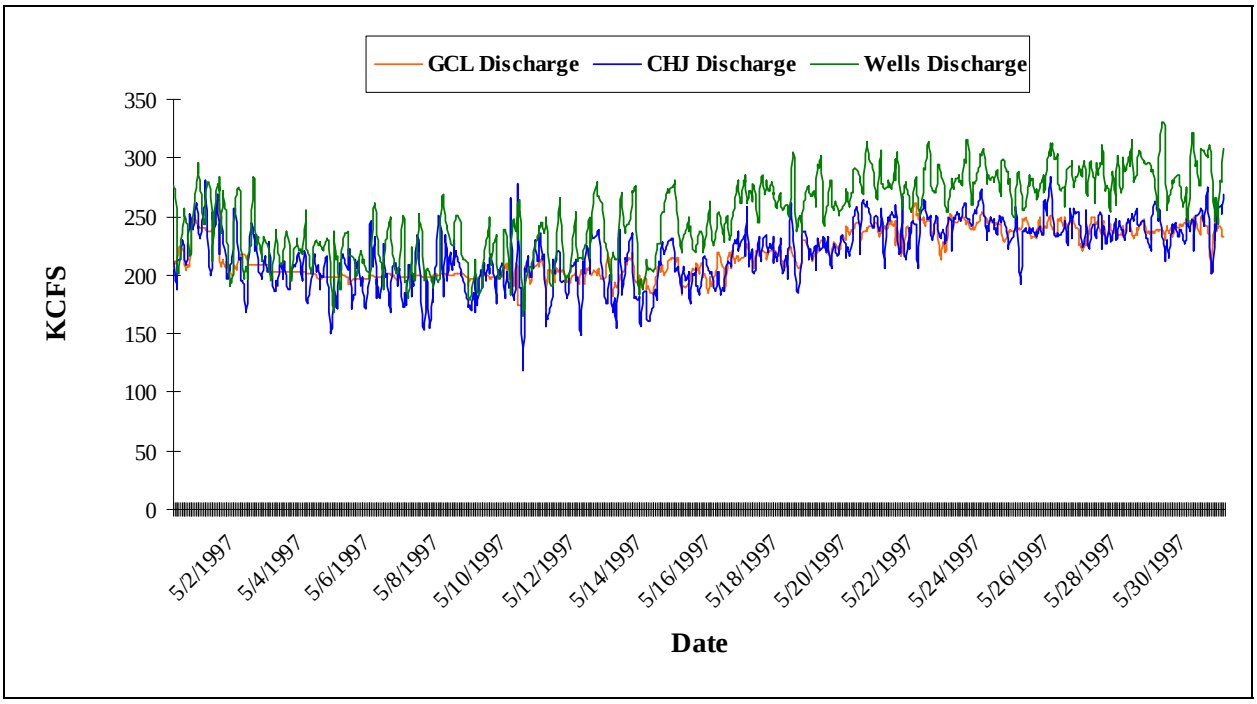

Figure 3.3-9 **Discharge from Grand Coulee, Chief Joseph, and Wells during May 1997 (wet year).**

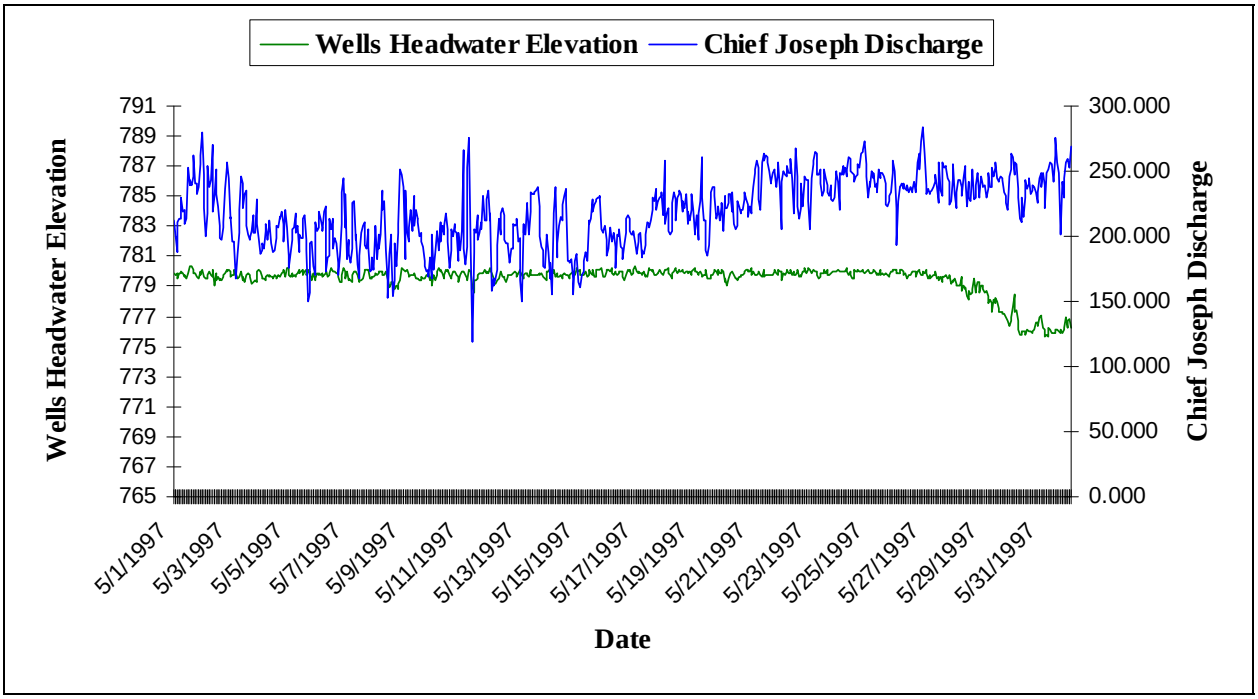

Figure 3.3-10 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during May 1997 (wet year).**

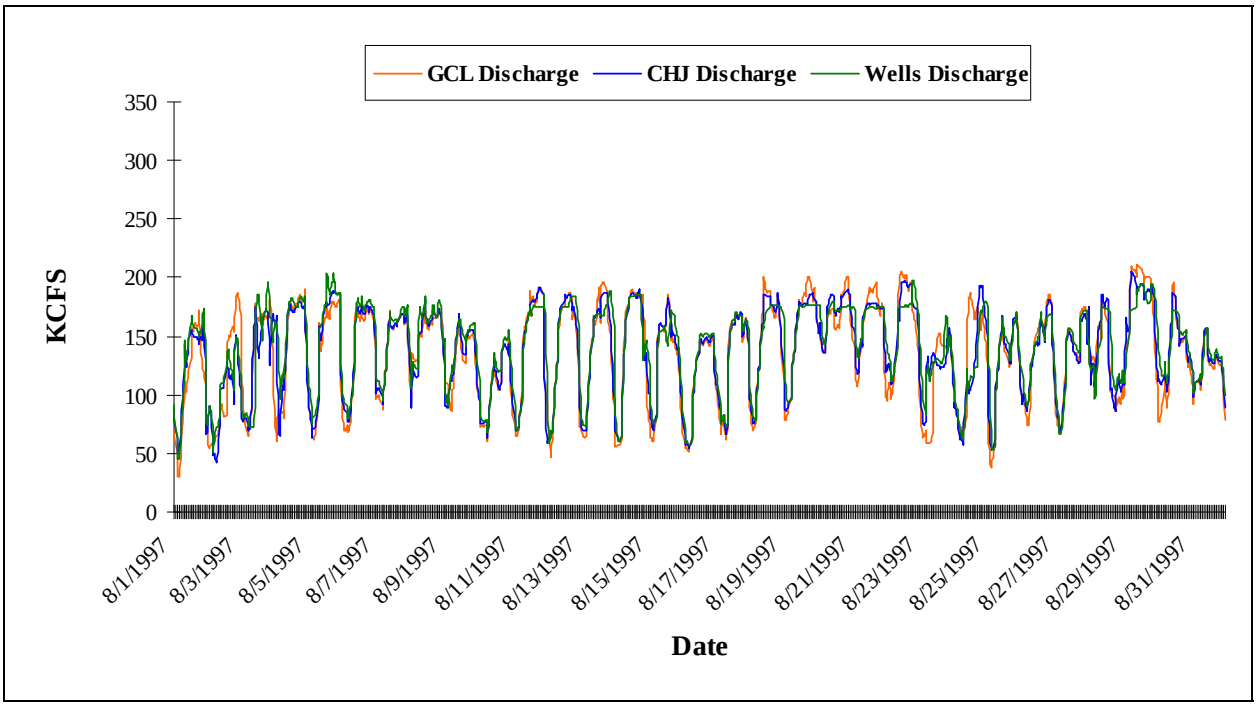

Figure 3.3-11 **Discharge from Grand Coulee, Chief Joseph, and Wells during August 1997 (wet year).**

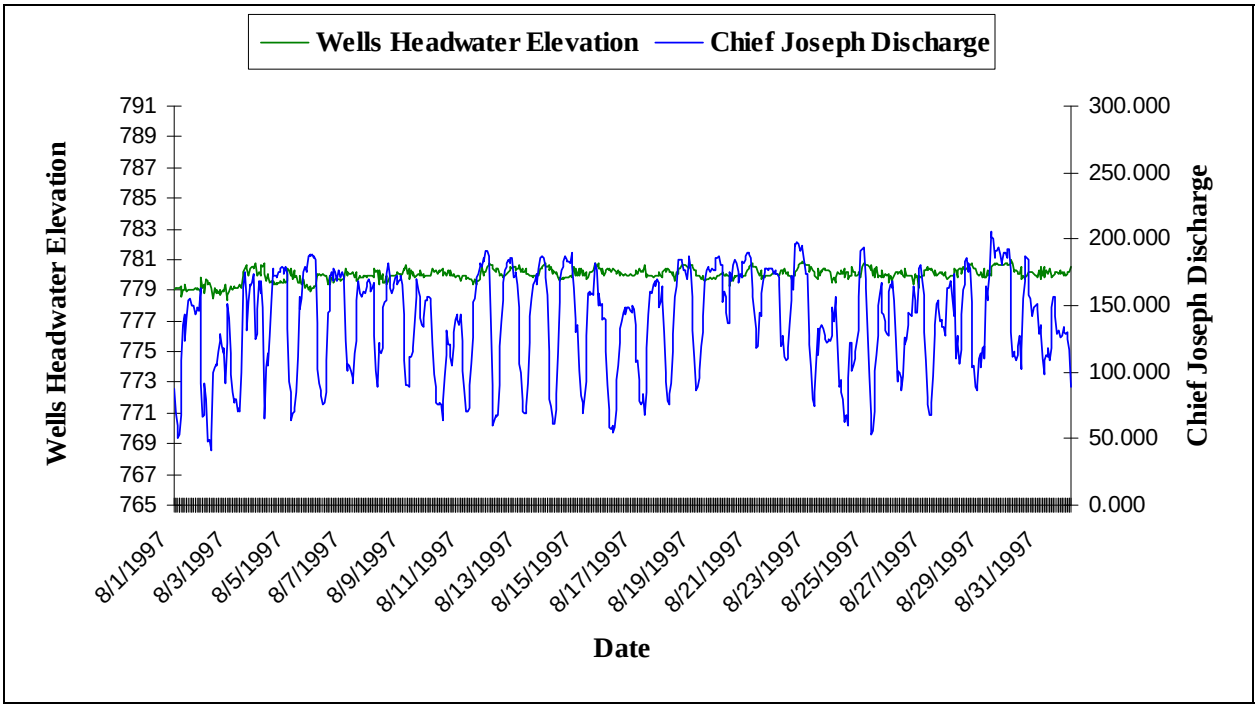

Figure 3.3-12 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during August 1997 (wet year).**

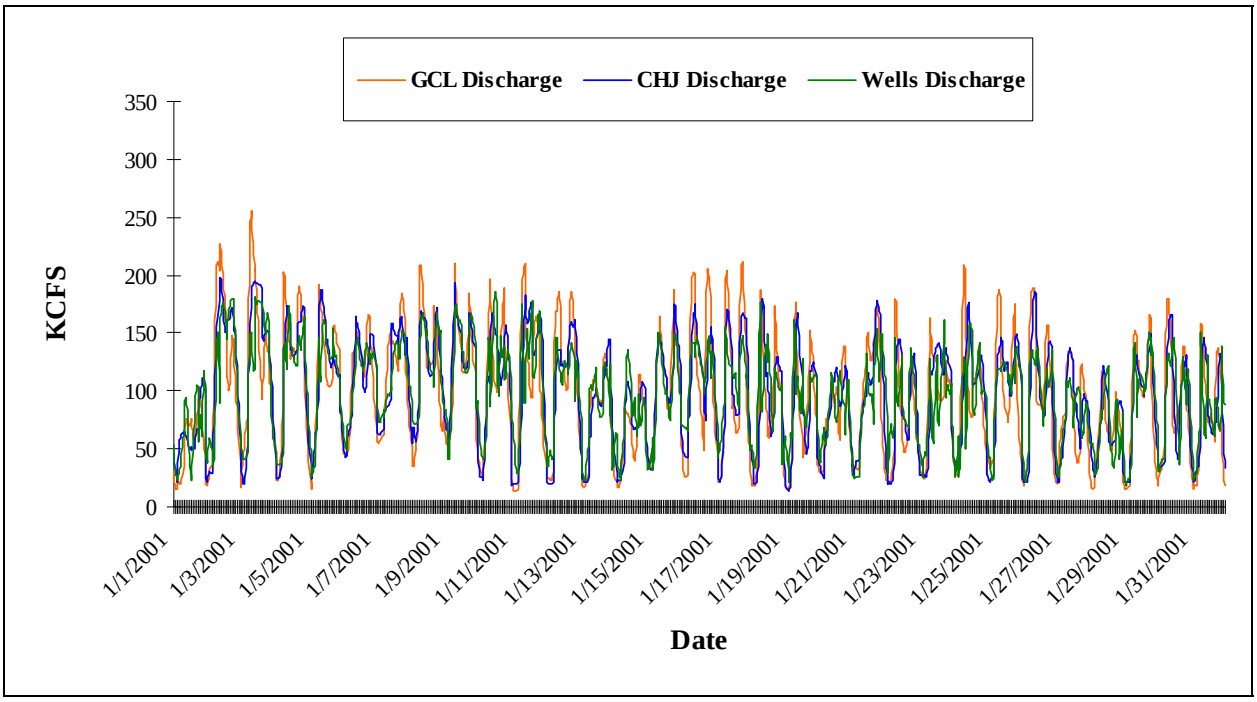

Figure 3.3-13 Discharge from Grand Coulee, Chief Joseph, and Wells during January 2001 (dry year).

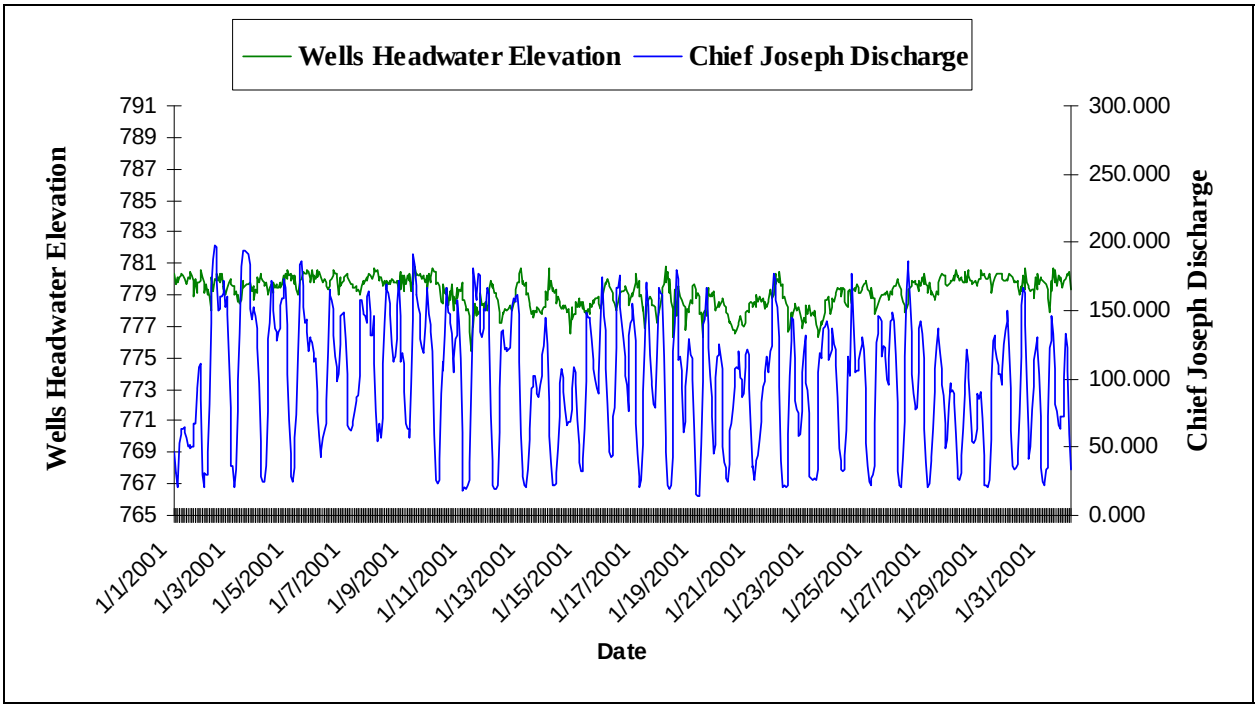

Figure 3.3-14 Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during January 2001 (dry year).

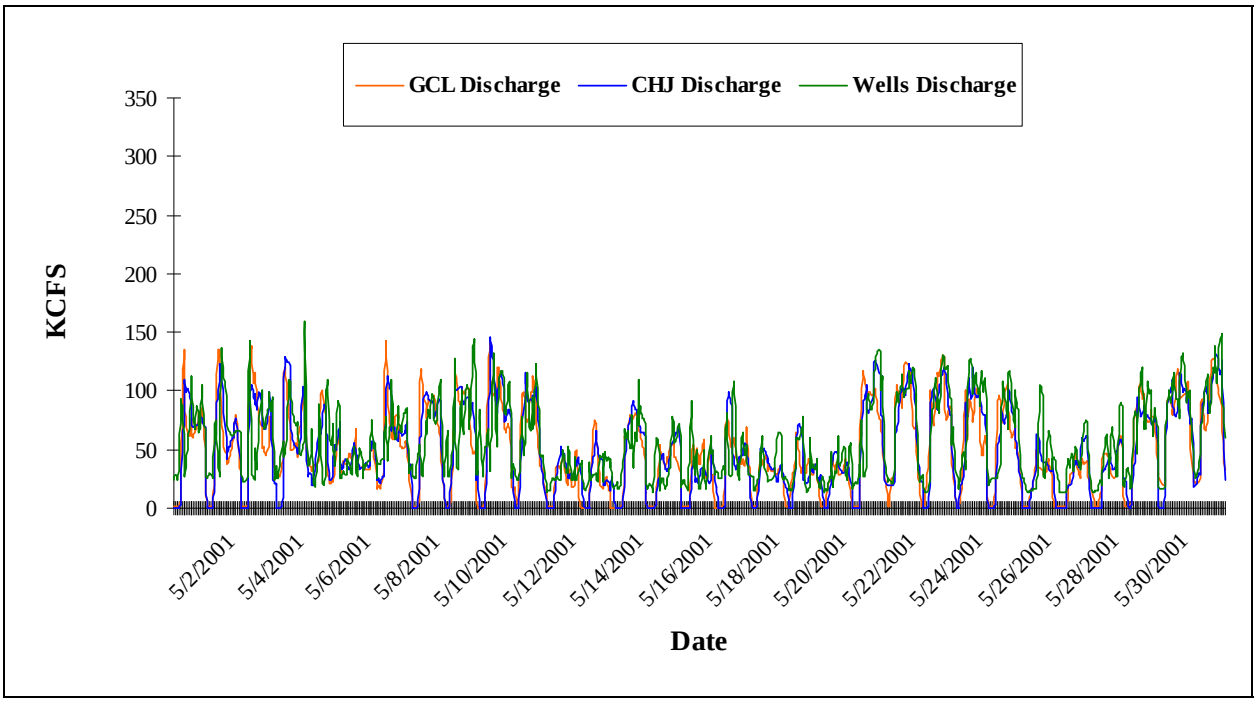

Figure 3.3-15 Discharge from Grand Coulee, Chief Joseph, and Wells during May 2001 (dry year).

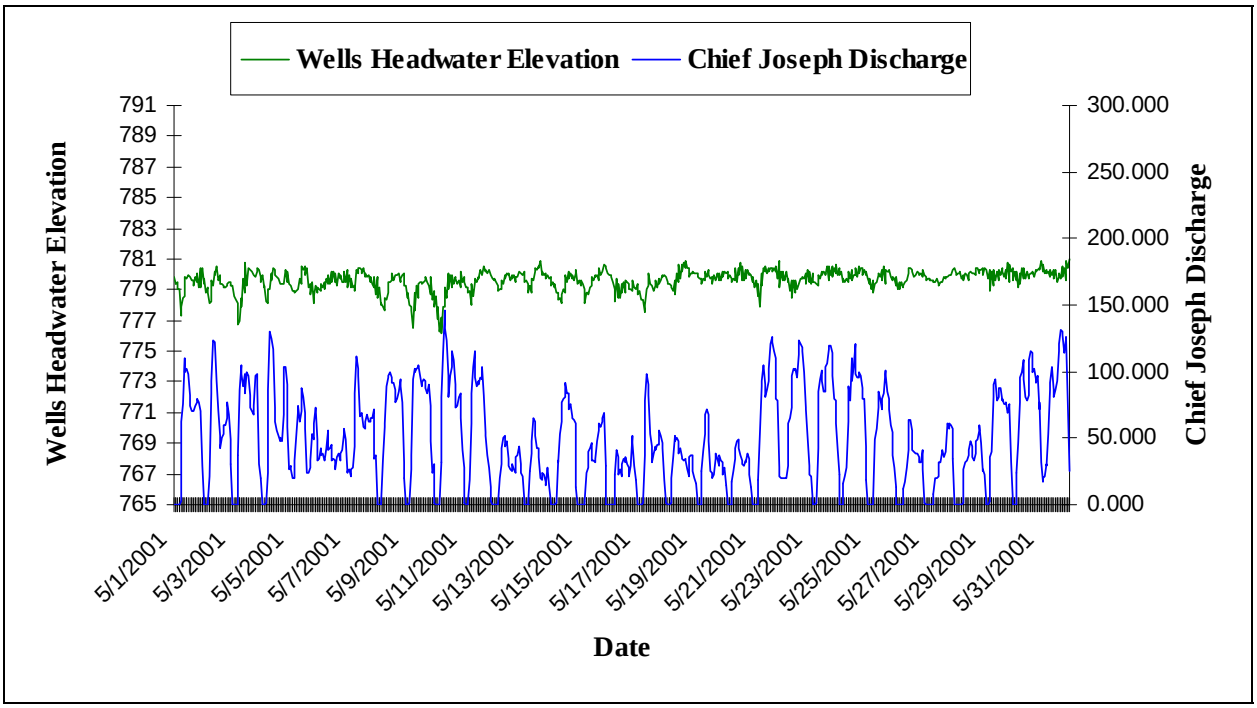

Figure 3.3-16 Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during May 2001 (dry year).

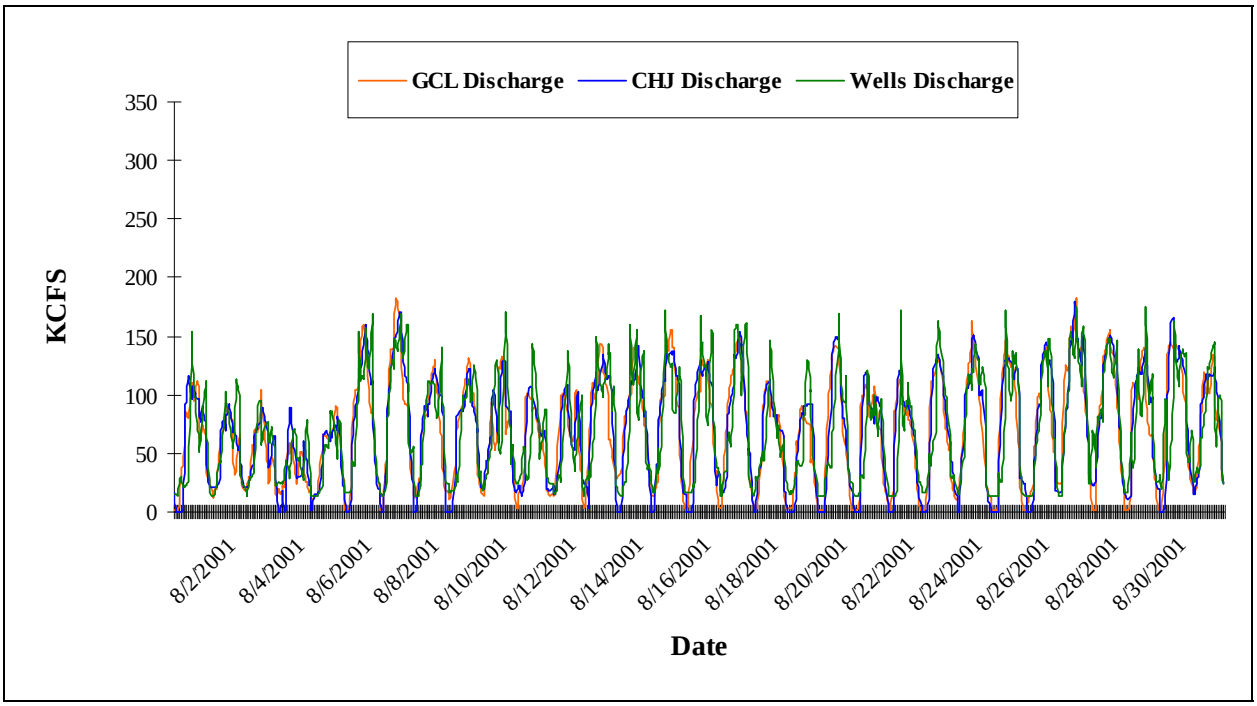

Figure 3.3-17 **Discharge from Grand Coulee, Chief Joseph, and Wells during August 2001 (dry year).**

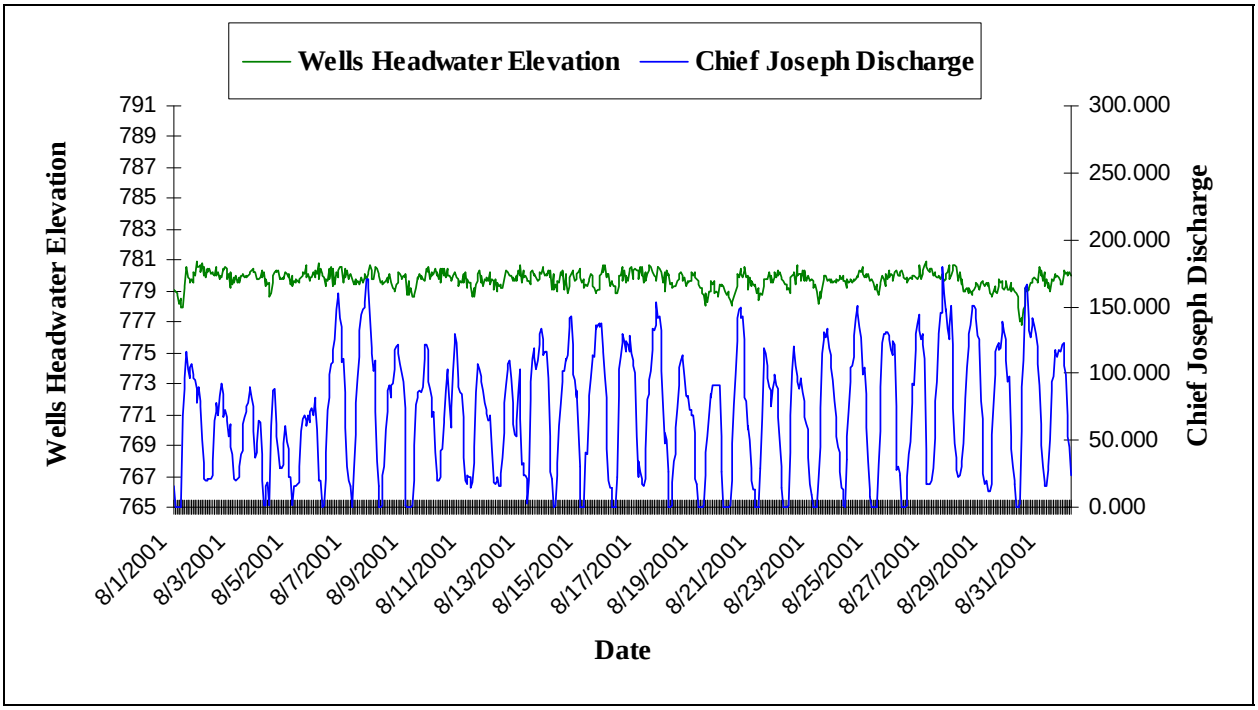

Figure 3.3-18 **Headwater elevation at Wells Dam with discharge from Chief Joseph Dam (in kcfs) during August 2001 (dry year).**

3.3.2 Operations for Non-Power Purposes

The Wells Project is operated to meet numerous non-power and resource protection goals. The major non-power programs affecting day-to-day plant and reservoir operations are presented below.

3.3.2.1 Habitat Conservation Plan

The Wells HCP outlines a schedule for meeting and maintaining NNI on Plan Species throughout the 50-year term of the agreement. NNI for Plan Species consists of two components including: (1) a 91 percent combined adult and juvenile Wells Project survival standard achieved by the Wells Project; and (2) up to 9 percent compensation for unavoidable Wells Project-related mortalities.

Compensation to meet NNI is provided through a hatchery and a tributary program under which 7 percent compensation is provided through hatchery production, and 2 percent compensation is provided through the funding of enhancements to tributary habitats that support Plan Species. The Wells HCP requires four committees for implementation, monitoring, and administration. These committees are the Policy, Coordinating, Hatchery, and Tributary committees.

The Passage Survival Plan contained within Section 4 of the Wells HCP provides specific details regarding the implementation of fish passage measures and quantification of unavoidable juvenile and adult losses for each of the Plan Species passing through Wells Dam. This section of the plan also contains specific survival standards that must be achieved within defined time frames in order for the licensee to be considered in compliance with the terms of the Wells HCP (Douglas PUD 2002).

In addition to the specific details regarding how survival studies will be implemented and evaluated relative to achieving NNI, the Wells HCP also contains specific criteria directed at the operation of the Wells juvenile fish bypass system. Section 4 of the Wells HCP outlines specific bypass operational criteria, operational timing, and evaluation protocols to ensure that at least 95 percent of the juvenile Plan Species passing through Wells Dam are provided a safe, non-turbine passage route around the dam (Wells Juvenile Dam Passage Survival Plan). The operational dates for the bypass are set annually by unanimous agreement of the HCP Signatory Parties. Over the past several years, the Wells HCP Coordinating Committee has agreed to initiate operation of the bypass system on April 12 and to shut it down on August 26. Bypass flows needed for the proper operation of the juvenile bypass system have amounted to approximately 7 percent of the river flow during the period of operation.

The Adult Passage Plan, as contained within Section 4.4 and Appendix A of the Wells HCP, is intended to ensure safe and rapid passage for adult Plan Species as they pass through the fish ladders at Wells Dam. The passage plan contains specific operating and maintenance criteria for the two adult fish ladders and the two adult fish ladder traps, and details criteria for passage studies on adult Plan Species, including studies related to passage success, timing, and rates of fallback. The Adult Ladder Dewatering Plan complements the Adult Passage Plan, and is

designed to ensure minimal migration disruption and maximum fish survival during ladder maintenance.

The Hatchery Compensation Plan, as described in Section 8 of the Wells HCP, was established to provide hatchery compensation for up to 7 percent unavoidable juvenile passage losses of Plan Species passing through Wells Dam. The goal of the program is to utilize hatchery-produced fish to replace unavoidable losses in such a manner that the hatchery fish produced contribute to the rebuilding and recovery of naturally-reproducing populations of Plan Species, in their native habitats, while maintaining the genetic and ecological integrity of each stock of Plan Species. Supporting harvest, where appropriate, was also identified as a goal of the Hatchery Compensation Plan.

The Hatchery Compensation Plan, together with NMFS's authorized Incidental Take (ITS) permits and Hatchery Genetic Management Plans (HGMP), form the basis for the NNI hatchery programs. In 2010, new HGMPs for Upper Columbia River spring Chinook salmon and Upper Columbia River steelhead were developed by the HCP Hatchery Committee at the request of the NMFS. The new HGMPs will require substantial modification to the facilities and operations previously authorized at the Methow and Wells fish hatcheries.

3.3.2.2 Hanford Reach Fall Chinook Protection Program

The Hanford Reach Fall Chinook Protection Program is the successor agreement to the 1988 Vernita Bar Settlement Agreement. On February 16, 1988, Douglas PUD entered into the Vernita Bar Settlement Agreement between and among Grant PUD, Chelan PUD, BPA, NMFS, WDFW, ODFW, the YN, the CUR, and the CCT. The agreement resulted from extensive negotiations with the aforementioned agencies and tribes to protect fall Chinook salmon spawning on the Vernita Bar in the Columbia River downstream of the Priest Rapids Project. The agreement attempts to achieve an appropriate balance between power production and the protection of fall Chinook salmon by identifying certain minimum flows scheduled to be maintained below Priest Rapids Dam during spawning, incubation, and emergence. The term of the Vernita Bar Settlement Agreement was for the remainder of the current license period for the Priest Rapids Project plus the term(s) of any annual license(s) issued thereafter.

The Hanford Reach Fall Chinook Protection Program Agreement was submitted to the FERC by Grant PUD on April 19, 2004 and approved in April 2008. The parties to this agreement include Grant PUD, Chelan PUD, Douglas PUD, NMFS, USFWS, WDFW, the CCT, the YN, and BPA. The agreement is designed to replace the Vernita Bar Agreement and will extend until the end of the new license term for the Priest Rapids Project. It establishes obligations for the three PUDs and BPA to provide acceptable protection for fall Chinook salmon at Vernita Bar, similar to the previous agreement. Additions to the successor agreement address juvenile outmigration and juvenile stranding issues in the Hanford Reach Area.

3.4 Project Flows and Generation

3.4.1 Project Flows

3.4.1.1 Minimum, Mean, and Maximum Flows

Douglas PUD records measurements of flow through its turbines plus spillway flow, when occurring, at Wells Dam. The average flow in the Columbia River at Wells Dam from 1968 to 2007 was 111.0 kcfs. The minimum and maximum average monthly flows ranged from 51.9 to 348.7 kcfs (Table 3.4-1).

Table 3.4-1 Monthly average flows (kcfs) of the Columbia River at Wells Dam from 1968 to 2007.

	Jan*	Feb*	Mar*	Apr*	May*	Jun*	Jul	Aug	Sep	Oct	Nov	Dec
Min	67.4	69.9	56.0	51.9	55.2	73.7	53.4	63.9	57.2	56.0	63.8	72.6
Mean	109.4	110.3	108.3	115.2	147.7	159.5	131.4	105.4	77.3	77.5	88.2	101.5
Max	159.2	180.7	193.9	184.9	262.6	348.7	221.9	181.3	123.0	108.9	110.0	149.0

*Discharge data for 1968 were not available.

Monthly flow duration curves derived from flows recorded at the Wells Project for the period 1968-2007 are provided in Figures 3.4.1 through 3.4-12.

3.4.1.2 Critical Period Flows

Under PNCA guidelines, the period of adverse stream flow that would produce the lowest amount of energy while drafting the reservoirs from full to empty is used to establish the "firm" energy production of the entire Columbia River system. This period is referred to as the "critical period." The firm energy estimate each year serves as a basis for determining how much power will be guaranteed to be available from the Columbia River system and, therefore, how much will be needed from other sources to meet expected energy loads in the region.

Historically, the critical period was determined from evaluation of the 60-year period of record from 1928 to 1988. The flow data were analyzed to identify that segment of the 60-year period of record that would produce the least amount of energy assuming all active storage in the reservoirs would be used. The period was generally determined to be the 42-month period from September 1, 1928 through February 29, 1932 and was referred to as the "four-year critical period."

Changes in operations of the Columbia River system as a result of the 1995 and 2000 BO have modified reservoir management and the seasonal flow regime of the river (BPA et al. 2001). One of the effects of these modifications is that the federal hydropower system is operated in a manner to benefit out-migrating salmon, resulting in the release of higher flows in the spring and summer months and lower flows in the winter months.

All non-power requirements (NPR) are incorporated into the planning process for establishing the critical period generation. As a result of operational changes resulting from the BOs, the amount of storage in the federal system available for power production has been reduced. Due to

NPRs, the federal and Canadian storage reservoirs are drafted to approximately 40 percent of usable storage from September through April, and then re-filled. The latest calculation from the Northwest Power Pool shows the critical period to be November 1936 through April 1937. The critical period is less than one year, but planning and operations are done on a 12-month operating year basis. The critical year can be thought of as the operating year that includes the critical period. The parties to the PNCA have employed different methodologies for determining firm capability for months that are within the critical year, but that are not within the critical period. For planning purposes, the critical year is currently defined to be the one-year period from August 1, 1936 through July 31, 1937.

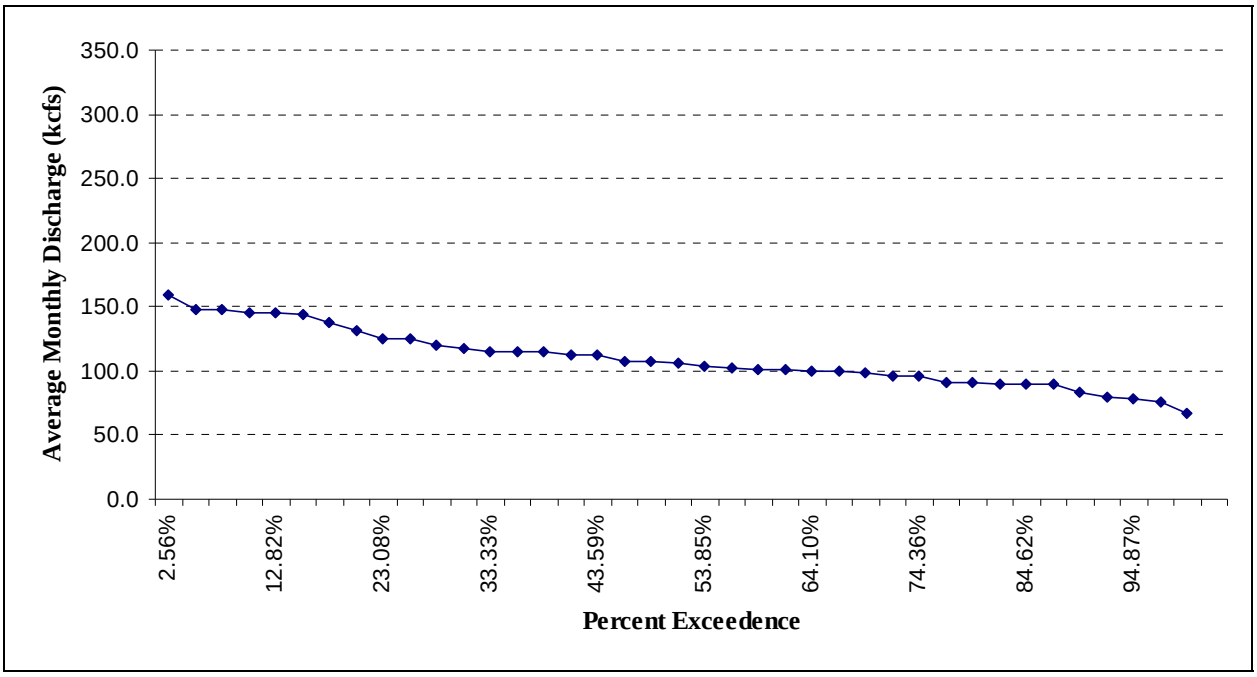

Figure 3.4-1 Flow duration curve for January 1969-2007 at Wells Dam.

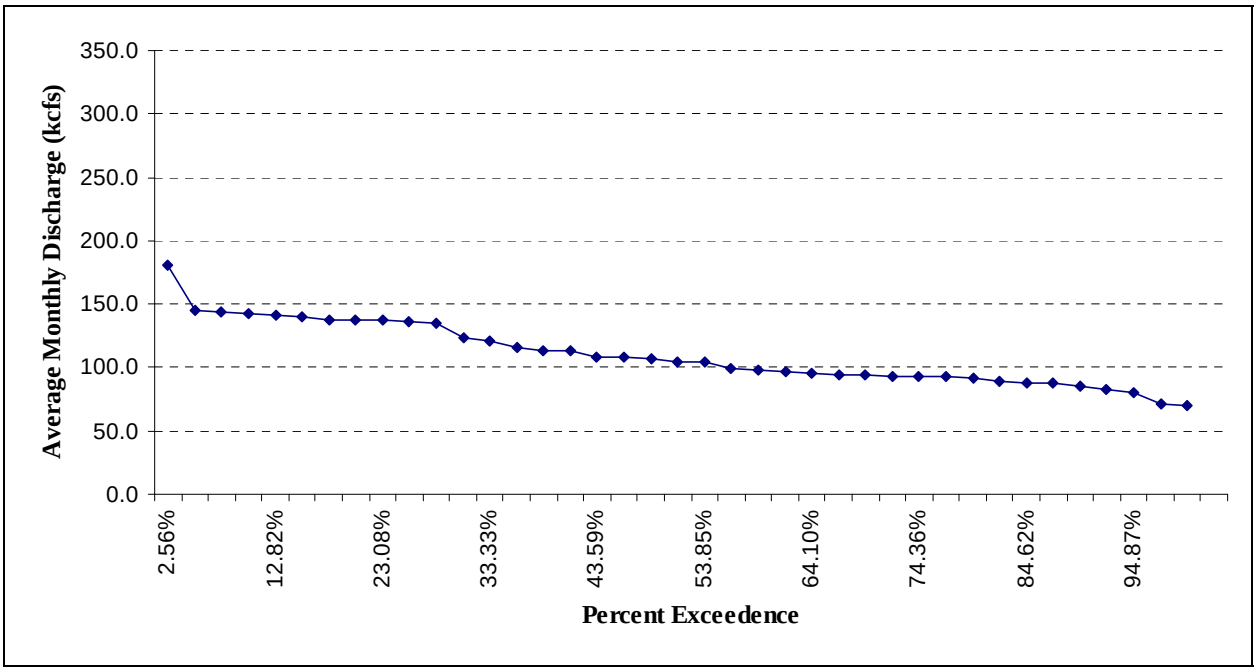

Figure 3.4-2 Flow duration curve for February 1969-2007 at Wells Dam.

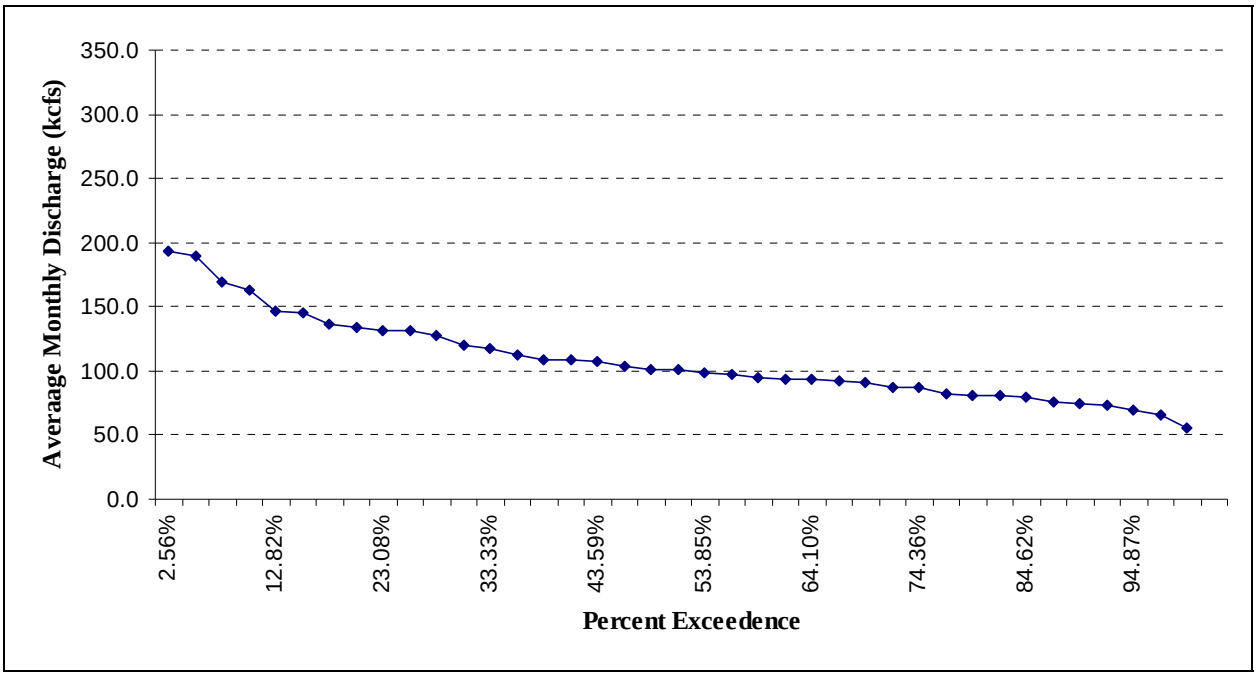

Figure 3.4-3 Flow duration curve for March 1969-2007 at Wells Dam.

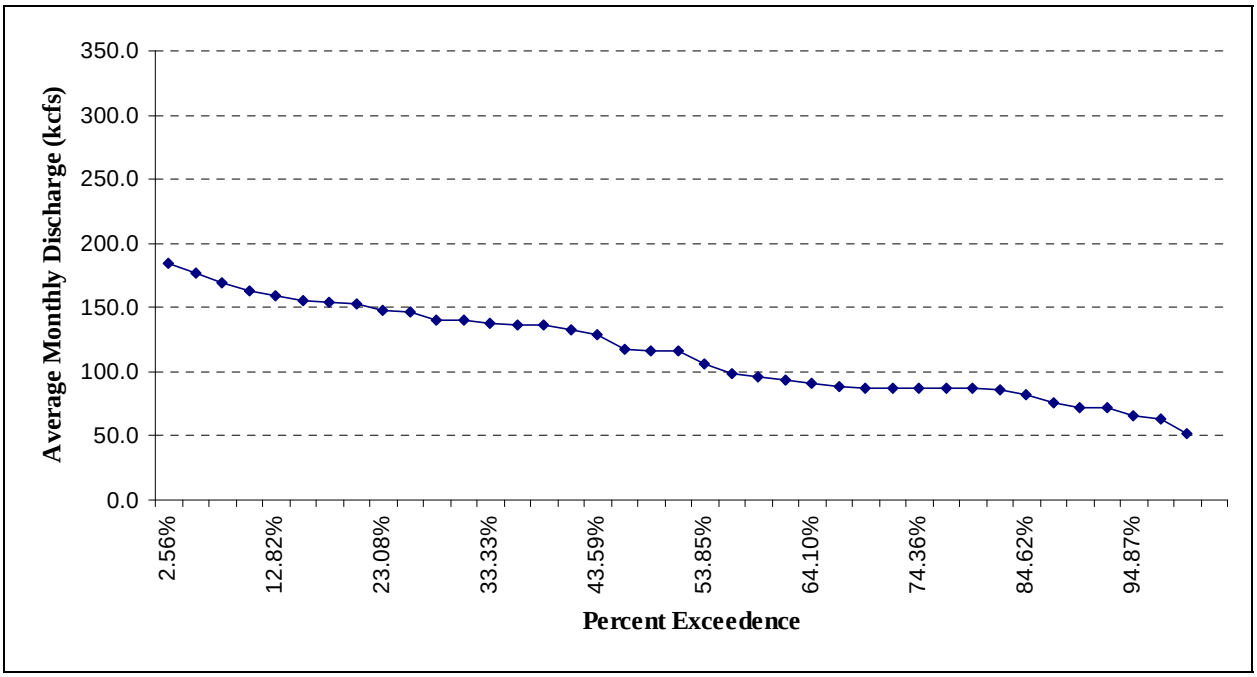

Figure 3.4-4 Flow duration curve for April 1969-2007 at Wells Dam.

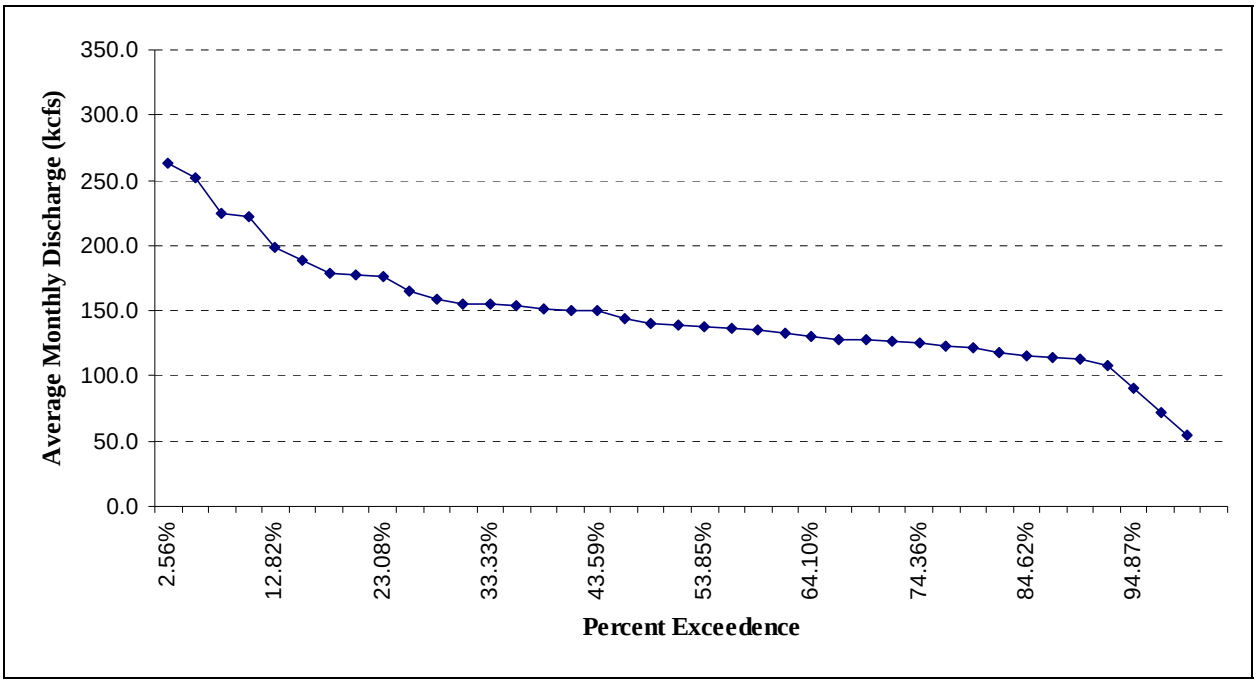

Figure 3.4-5 Flow duration curve for May 1969-2007 at Wells Dam.

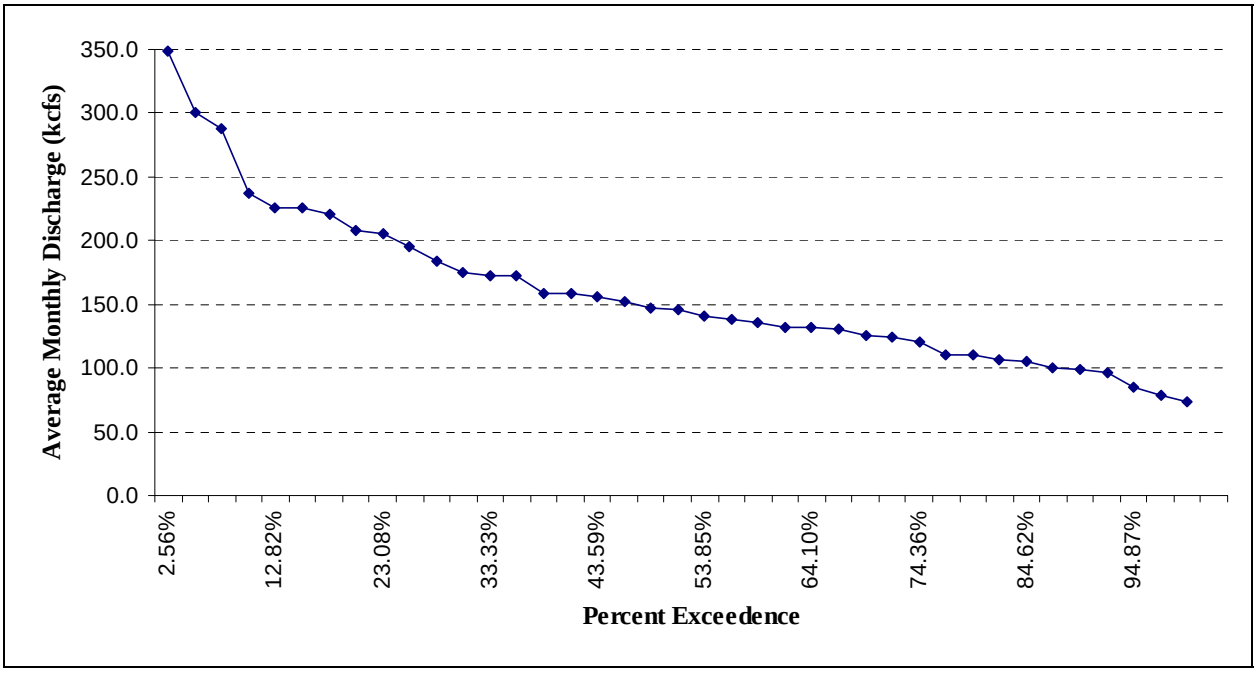

Figure 3.4-6 Flow duration curve for June 1969-2007 at Wells Dam.

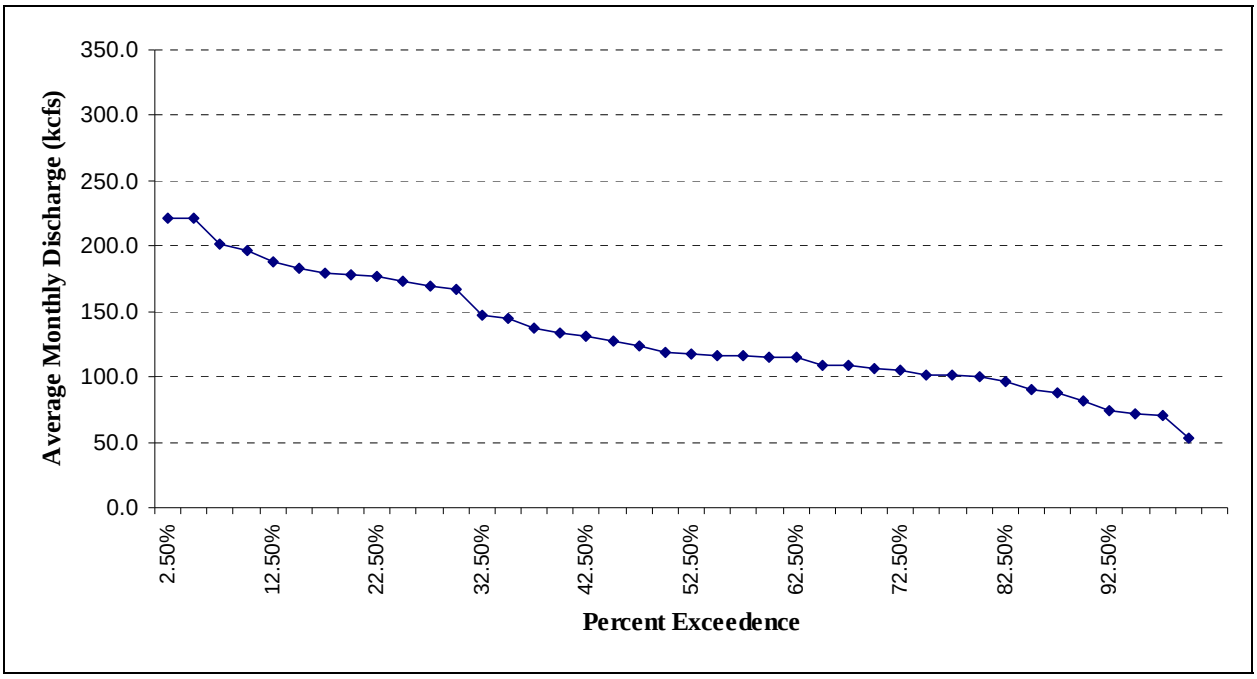

Figure 3.4-7 Flow duration curve for July 1968-2007 at Wells Dam.

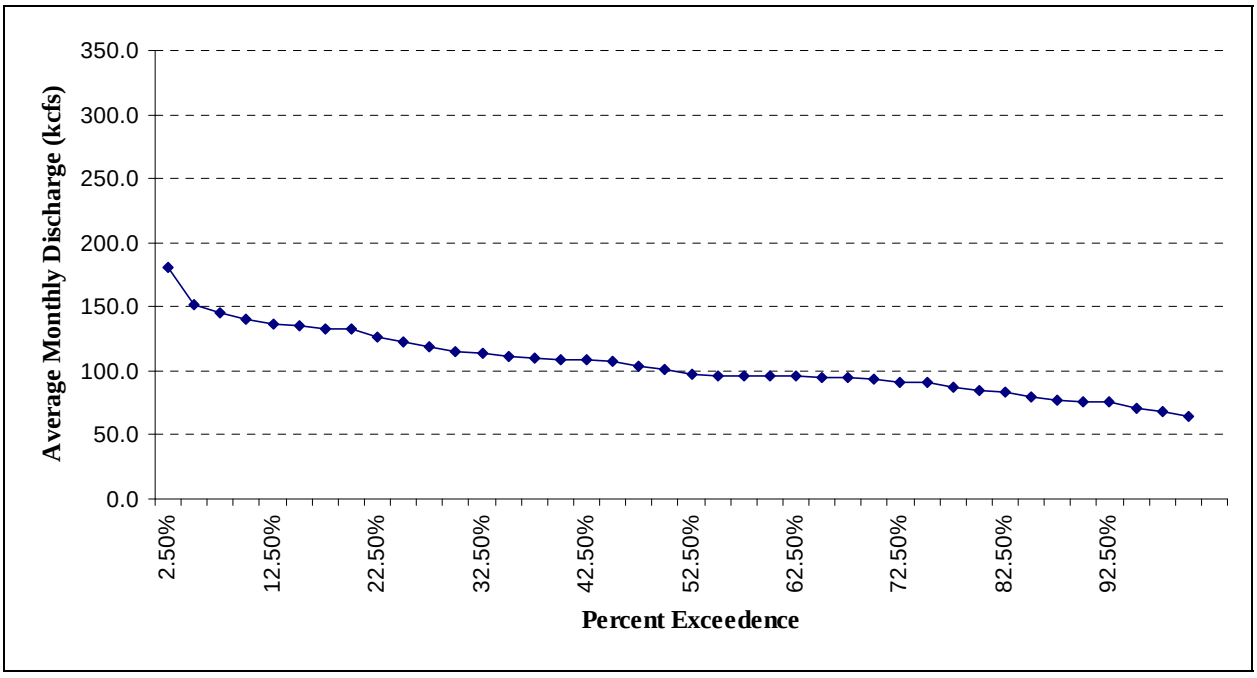

Figure 3.4-8 Flow duration curve for August 1968-2007 at Wells Dam.

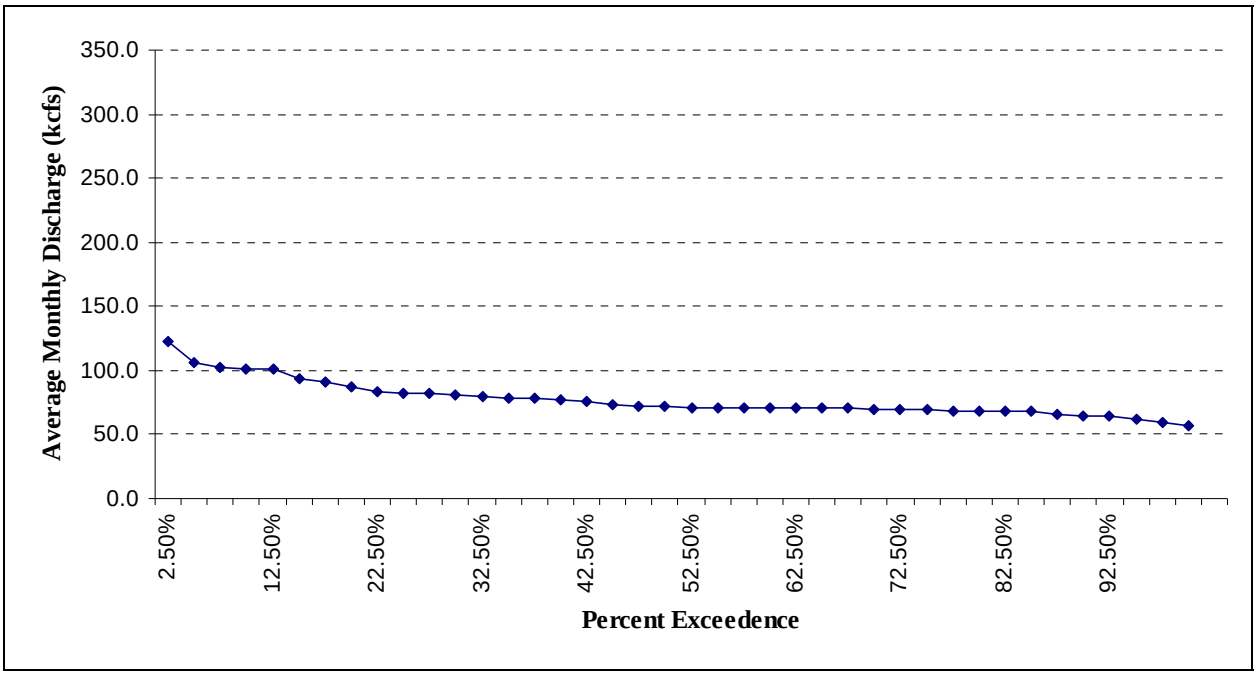

Figure 3.4-9 Flow duration curve for September 1968-2007 at Wells Dam.

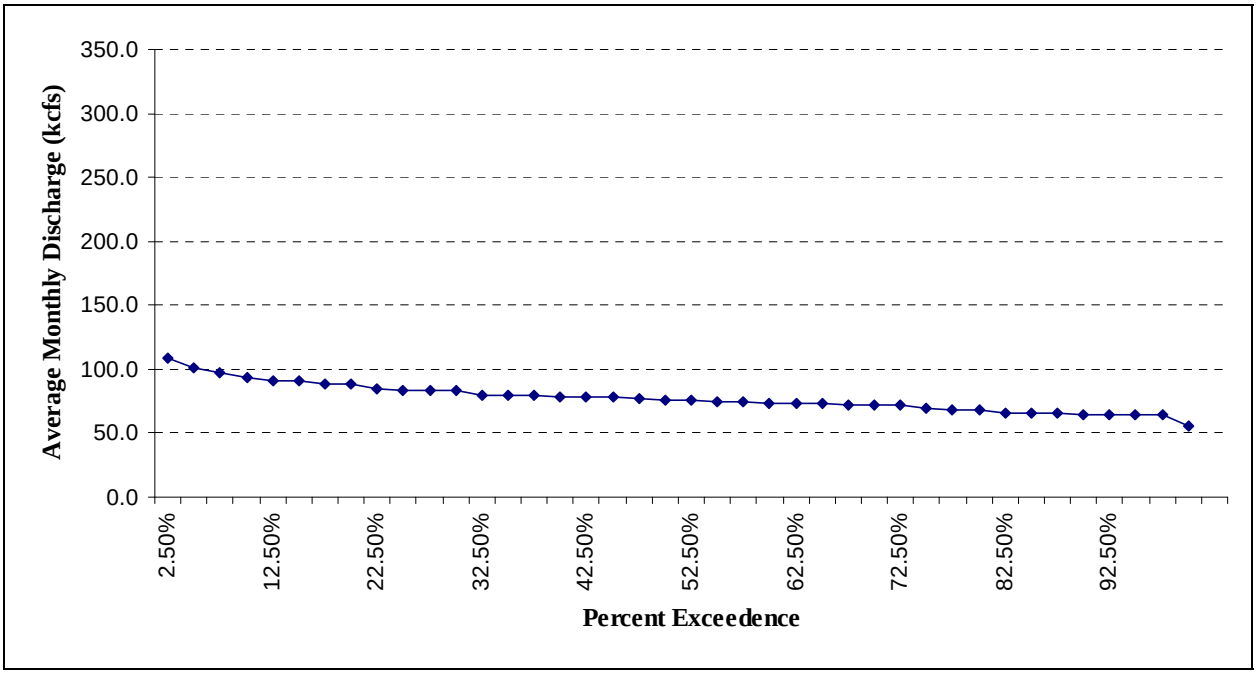

Figure 3.4-10 Flow duration curve for October 1968-2007 at Wells Dam.

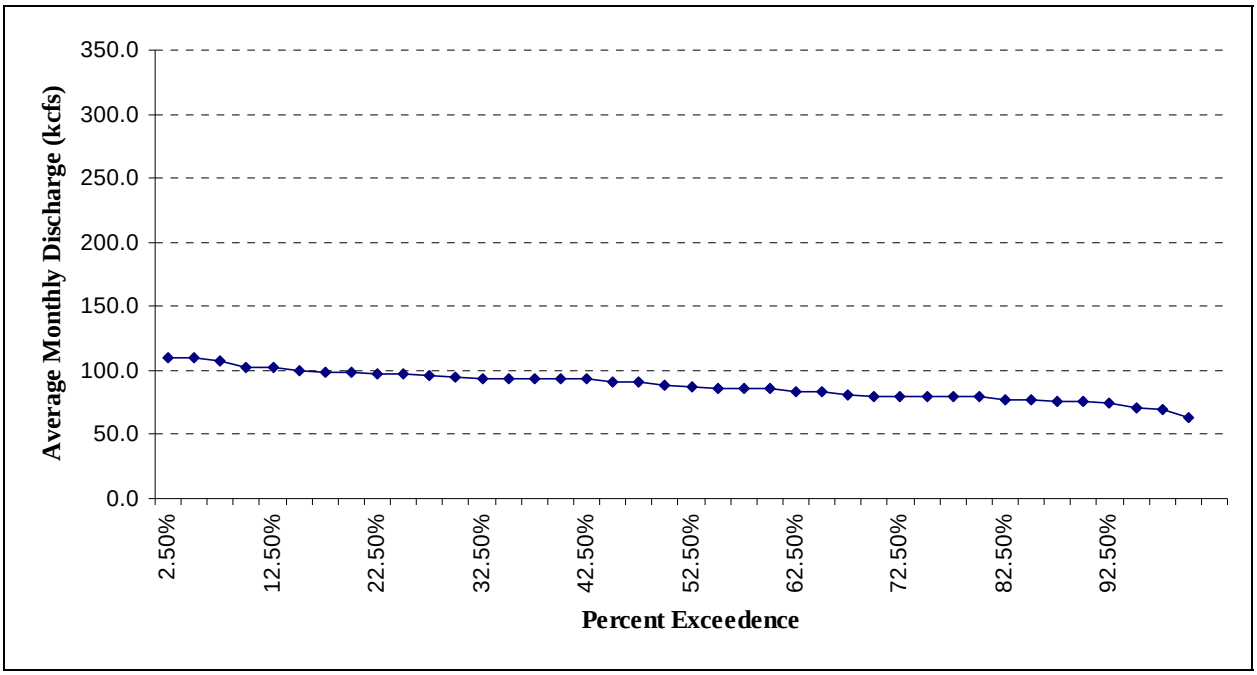

Figure 3.4-11 Flow duration curve for November 1968-2007 at Wells Dam.

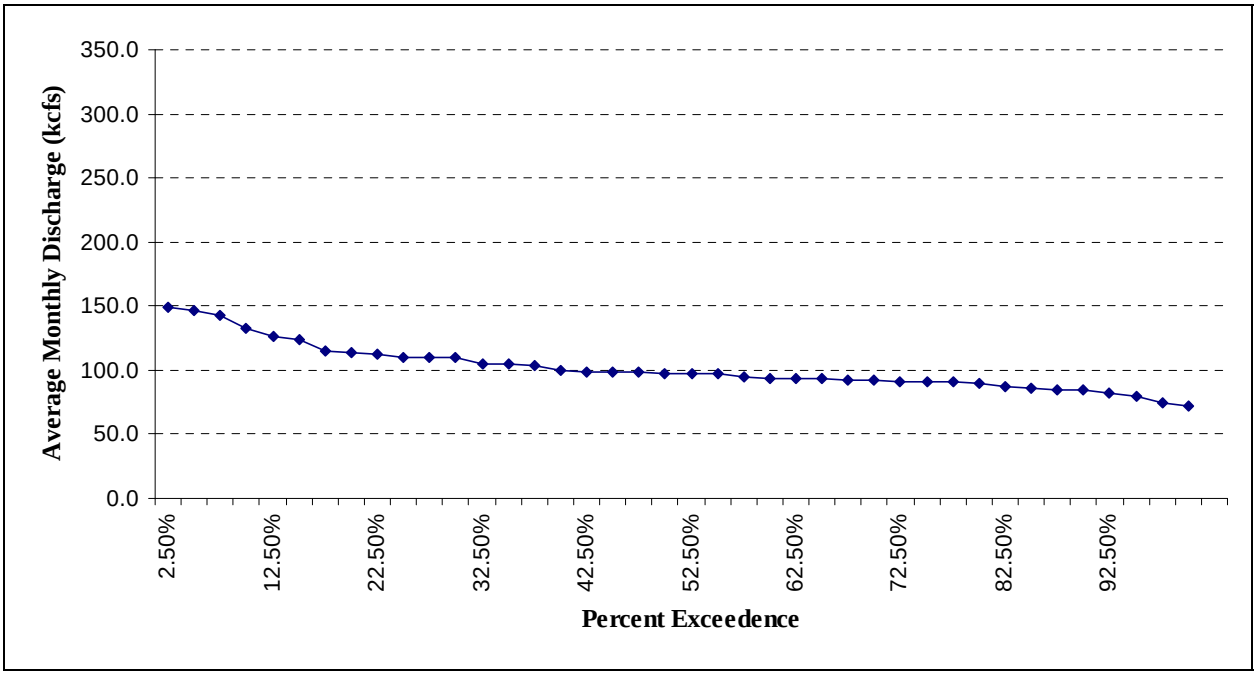

Figure 3.4-12 Flow duration curve for December 1968-2007 at Wells Dam.

3.4.2 Project Generation

3.4.2.1 Average Energy Production and Utilization

The average net energy output of the Wells Project for the 5-year period 2003 through 2007 was 4,077,400 megawatt-hours (MWh). Table 3.4-2 provides a detailed breakdown of the various end uses of Project generation for the 2003 through 2007 period.

Table 3.4-2 Wells Project - energy output by fiscal year ending August 31.

	2003	2004	2005	2006	2007
Net Generation[1]	3,890	3,795	4,158	4,213	4,331
Less: Chief Joseph Encroachment	357	345	342	317	361
Exchange[2]	1	-	-	-	-
Generation for Canada[3]	160	219	218	211	204
Colville Power Sales Contract[4]	-	-	72	168	171
Other	(24)	(17)	8	(54)	(68)
Generation for Sale	3,396	3,248	3,518	3,571	3,663
Less: Generation for Canada[5]	25	-	-	-	-
Balance[6]	3,371	3,248	3,518	3,571	3,663

1 In 1,000 MWhs, variations from year to year reflect actual water conditions.

2 Adjustments made periodically to the generation available for sale from the Wells Project.

3 Amounts required to be delivered to Canada as the Wells Project Allocation to Canadian Entitlement pursuant to the Allocation Extension Agreement.

4 Amounts required to be sold pursuant to the Colville Power Sales Contract.

5 Amounts required to be delivered to Canada as the Wells Project Allocation to Canadian Entitlement pursuant to the Allocation Agreement which expired on March 31, 2003.

6 Amounts available to the Power Purchasers and Douglas PUD.

3.4.2.2 Annual Plant Factor

Based on the Project's installed nameplate capacity of 774.3 megawatts (MW) and the average annual net plant generation of 4,077,400 MWh under the current operational regime (2003 to 2007), the Wells Project has an annual plant factor of 60 percent.

3.4.2.3 Estimate of Dependable Capacity

The dependable capacity of the Wells Project is approximately 715 MW. This estimate is calculated using the minimum average monthly flow of the Columbia River during the critical month (January), and supplementing that flow by the usable storage capacity available for a four-hour period.

3.4.2.4 Plant Capability Versus Head

The Wells Project operates over a 10-foot reservoir operating zone, from a normal minimum forebay elevation of 771 feet to the normal maximum pool elevation of 781 feet. The tailwater at the Wells Project is subject to encroachment by the backwater pool of the downstream Rocky Reach Project. The estimated tailwater rating curve at the Wells powerhouse is provided in Figure 3.4-13.

Combining the allowable variation of the reservoir, the expected turbine-generator performance values, and estimated maximum turbine hydraulic capacity at the various heads yields an estimate of the plant capability at the gross heads available at the Project. This is shown in Figure 3.4-14. These values are estimated and have not been field-verified.

3.4.3 Reservoir Operations

The Wells Reservoir is authorized to operate between elevations 781 and 771 feet. The usable storage between these two elevations is 97,985 ac-ft, or 0.1 million acre-feet (MAF). The reservoir has a surface area of 9,740 acres at elevation 781 feet. Figure 3.4-15 shows area and capacity data for the reservoir. This use of storage is critical to the operation of the Wells Project due to its proximity to the two federal projects, Grand Coulee and Chief Joseph, both of which discharge flows for peaking and load-following purposes, resulting in rapidly changing flow levels, often without advance warning to Douglas PUD. Use of storage is also essential to the operations under the HCA and for fulfilling Douglas PUD's obligations to the COE during flood flows (see Article 34 of the Wells license [Exhibit B; Appendix B-1]).

In any event, water storage at Wells is used judiciously. Over the period 1990 to 2005, reservoir levels fell below 779 feet approximately 15 percent of the time and below 777 feet only 1.1 percent of the time on average in a given year.

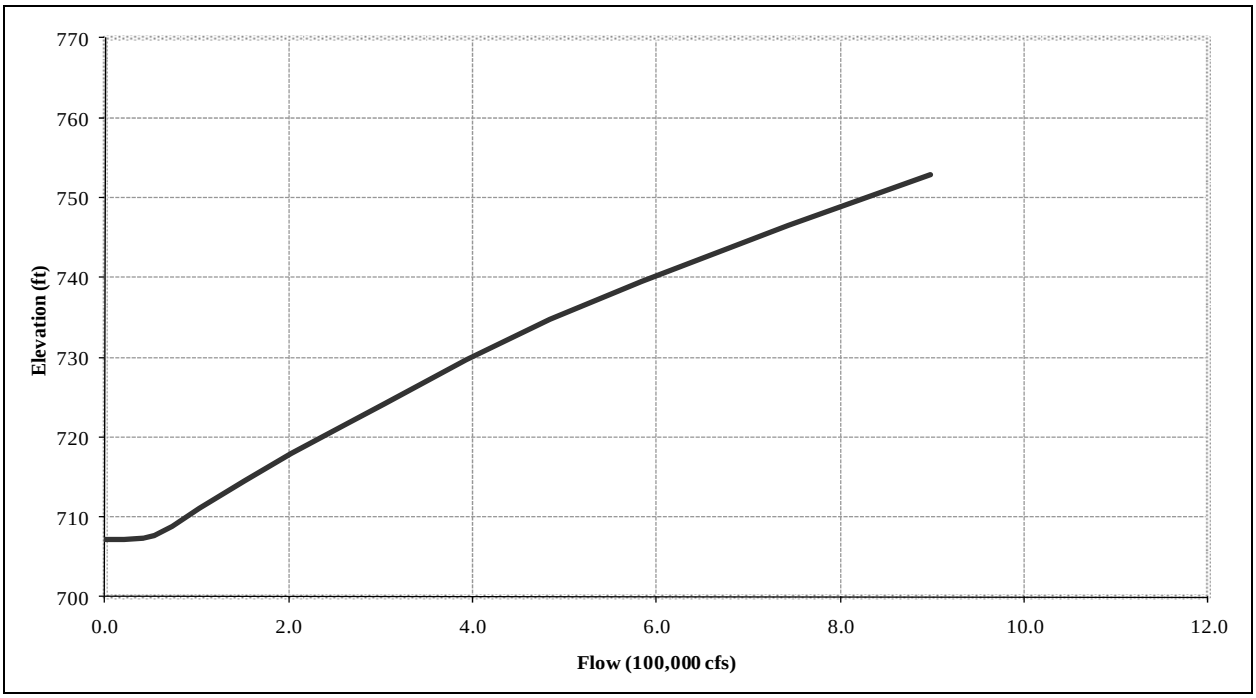

Figure 3.4-13 Tailwater rating curve for the Wells Project. [The normal pool elevation of Chelan PUD's Rocky Reach Project is elevation 707 feet.]

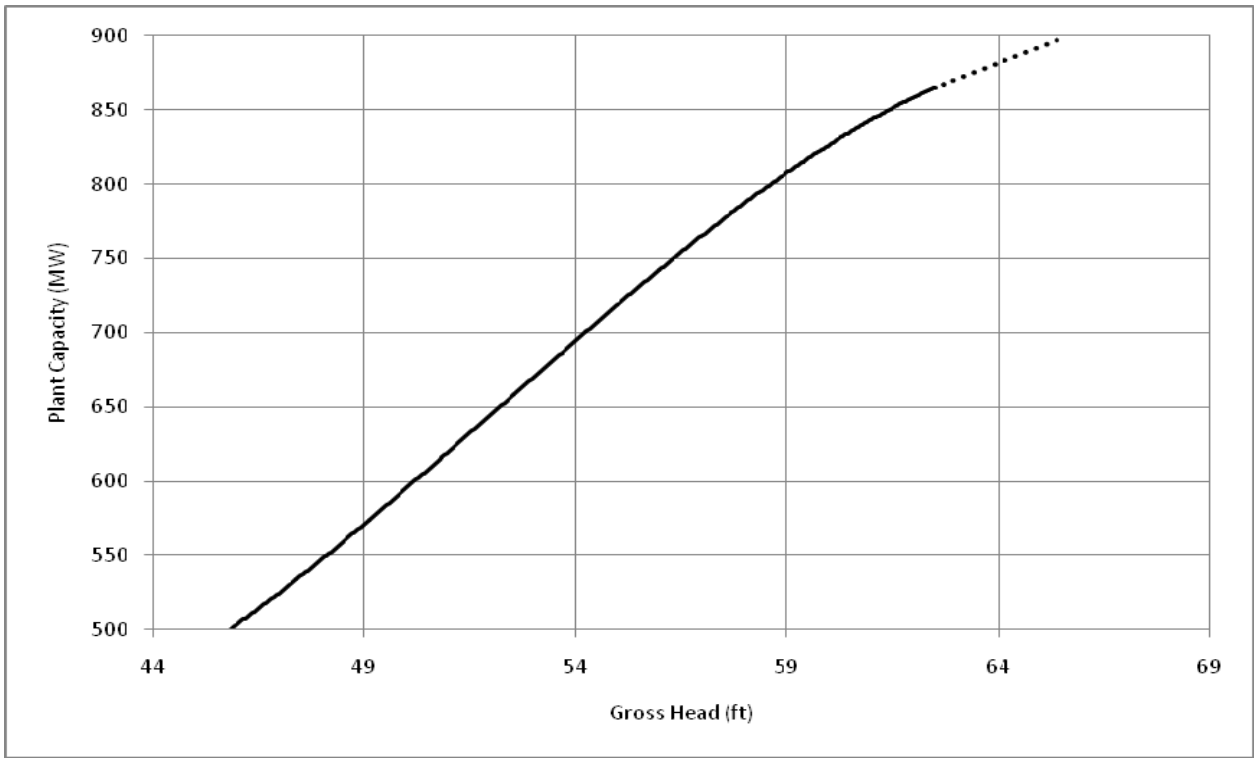

Figure 3.4-14 Powerplant capability versus net head. [Note: maximum gross head at Wells Dam under low river flows and normal maximum pool elevations at Wells and Rocky Reach is 73 feet. Maximum gross head with ten units at full wicket gate opening is 62.5 feet.]

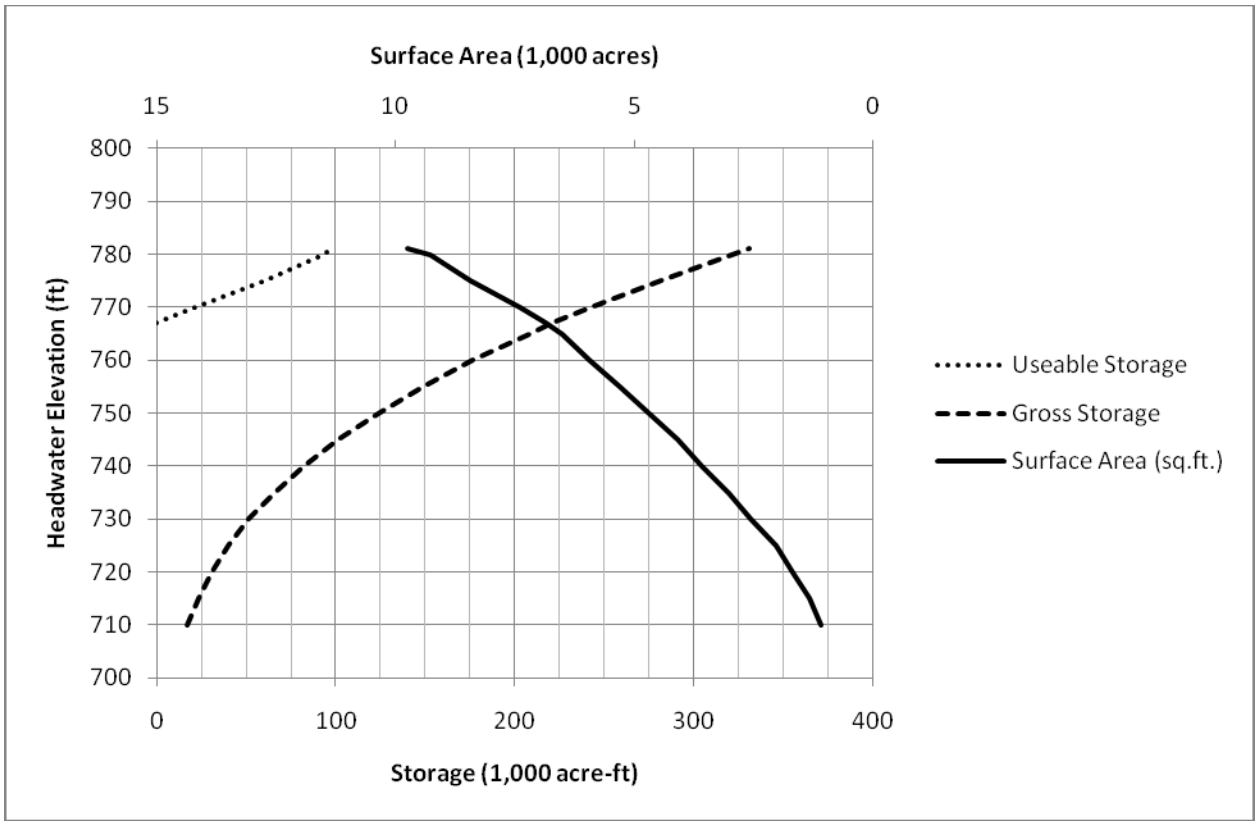

Figure 3.4-15 Area capacity curve for the Wells Reservoir.

4.0 RESOURCE UTILIZATION AND FUTURE DEVELOPMENT

The minimum hydraulic capacity of the powerhouse is 13 kcfs, which is the flow needed to maintain station service and reliability. At a maximum hydraulic capacity approaching 220 kcfs, the Project turbines have a flow capability that exceeds river flow greater than 95 percent of the time in all months except May and June. Even in those months, flows in the Columbia River exceed 220 kcfs only 12 and 20 percent of the time, respectively. Therefore, expansion of turbine capacity is not economically feasible at the present time.

Improvements to operations at Wells have most recently focused on governor upgrades, completed in 2000 for all 10 units, and the potential for efficiency improvements of both the turbine and generator, studies of which are currently underway. Consideration of such improvements for units the size of those at Wells (80 MW each) is a long and meticulous process and will be carefully undertaken over the next 5 to 10 years. Potential improvements are expected to be relatively small (2 to 4 percent), but not insignificant when considering the size and dependable capacity of the units at the Wells Project.

5.0 REFERENCES

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Appendix B-1

Current License Articles

The FERC license for the Wells Project currently contains 61 separate license articles. FERC, through various orders amending the Wells Project license, has added and modified various license articles governing the construction, operation and maintenance of the Wells Project. The initial license issued on July 12, 1962 included the standard terms and conditions of Form L-6 (December 15, 1953) except for Articles 23 and 24, the last sentence of Article 17 and special conditions set forth as additional Articles 28-47. Article 48 was added to the license on January 5, 1981. Articles 49-58 were added on September 23, 1982. Articles 59-63 were added on June 21, 2004.

The standard articles of Form L-6, FPC Terms and Conditions of License for Unconstructed Major Project Affecting Navigable Waters and Lands of the United States, revised as of December 15, 1953, are a part of the license, except as noted below.

Article 1. The entire project, as described in the order of the Commission, shall be subject to all the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, that if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval amended, supplemental, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. Said project works shall be constructed in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, no substantial alteration or addition not in conformity with the approved plans shall be made to any dam or other project works under the license without prior approval of the Commission; and any emergency alternation or addition so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in the project works or divergence from such approved exhibits may be made if such changes will not result in decrease in efficiency, in material increase in cost, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may from time to time prescribe for the protection of life, health, or property.

Article 4. The construction, operation, and maintenance of the project and any work incident to additions or alterations, whether or not conducted upon lands of the United States, shall be subject to the inspection and supervision of the Regional Engineer, Federal Power Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes.

The Licensee shall furnish to said representative such information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, and as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow him and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties.

Article 5. Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised maps, plans, specifications, and statements insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the maps, plans, specifications, and statements approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variations in or divergence from the approved maps, plans, specifications, and statements. Such revised maps, plans, specifications, and statements shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 6. For the purpose of determining the stage and flow of the stream or streams from which water is to be diverted for the operation of the project works, the amount of water held in and withdrawn from storage, and the effective head on the turbines, the Licensee shall install and thereafter maintain such gages and stream-gaging stations as the Commission may deem necessary and best adapted to the requirements; and shall provide for the required readings of such gages and for the adequate rating of such stations. The Licensee shall also install and maintain standard meters adequate for the determination of the amount of electric energy generated by said project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission and may be altered from time to time if necessary to secure adequate determinations, but such alteration shall not be made except with the approval of the Commission or upon the specific direction of the Commission. The installation of gages, the ratings of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of said project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient record of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 7. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and recreational purposes, including fishing and hunting, and shall allow to a reasonable extent

for such purposes the construction of access roads, wharves, landings, and other facilities on its lands the occupancy of which may, in appropriate circumstances, be subject to payment of rent to the Licensee in a reasonable amount: Provided, that the Licensee may reserve from public access, such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property and Provided further, that the Licensee's consent to the construction of access roads, wharves, landings, and other facilities shall not, without its express agreement, place upon the Licensee any obligation to construct or maintain such facilities.

Article 8. In the construction and maintenance of the project, the location and standards of roads and trails, and other land uses, including the location and condition of quarries, borrow pits, spoil disposal areas, and sanitary facilities, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 9. Insofar as any material is dredged or excavated in the prosecution of any work authorized under the license, or in the maintenance of the project, such material shall be removed and deposited so it will not interfere with navigation, and will be to the satisfaction of the district Engineer, Department of the Army, in charge of the locality.

Article 10. In the construction and maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines, and telegraph, telephone, and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling and obstructing traffic and endangering life on highways, streets, or railroads.

Article 11. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction. None of the provisions of this article is intended to relieve the Licensee from any responsibility or requirement which may be imposed by other lawful authority for avoiding or eliminating inductive interference.

Article 12. The Licensee shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission line; shall cut and remove all dead or leaning trees which might fall in contact with the transmission line; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 13. Timber on lands of the United States cut, used, or destroyed in the construction and maintenance of the project works or in the clearing of said lands shall be paid for in accordance with the requirements of and at the current stumpage rates applicable to the sale of similar timber by the agency of the United States having jurisdiction over said lands; and all slash and debris resulting from the cutting or destruction of such timber shall be disposed of as the officer of such agency may direct.

Article 14. The Licensee shall do everything reasonably within its power and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon request of officers of the agency of the United States concerned, to prevent, make advanced preparations for suppression, and suppress fires on lands occupied under the license.

Article 15. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and its rights-of-way and such right of passage through its dams or other structures, and permit such control of pools as may be required to complete and maintain such navigation facilities.

Article 16. The Licensee shall furnish free of cost to the United States power for the operation and maintenance of navigation facilities at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 17. The operation of any navigation facilities, which may be constructed as a part of or in connection with any dam or diversion structure constituting a part of the project works, shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including the control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army. ~~Such rules and regulations may include the construction, maintenance, and operation by the Licensee, at its own expense, of such lights and signals as may be directed by the Secretary of the Army.~~

Last sentence was not included in the initial license per FPC Order Issuing License (Major) issued July 12, 1962, page 6, paragraph (B).

Article 18. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes; and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the

Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 19. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or to the use by said parties of water for sanitary and domestic purposes from any stream or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 20. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 21. The Licensee shall allow any agency of the United States without charge, to construct or permit to be constructed on, through, and across the project lands, conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other means of transportation and communication not inconsistent with the enjoyment of said lands by the Licensee for the purposes stated in the license. This article shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 22. There is reserved to the appropriate department or agency of the United States, or of the State or county involved, the right to take over, maintain, and supervise the use of any project road as a public road after construction of the project works is completed.

~~Article 23. The actual legitimate original cost of the original project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Act and the Commission's rules and regulations thereunder.~~

~~Article 24. After the first twenty (20) years of operation of the project under the license, six (6) percent per annum shall be the specified rate of return on the net investment in the project for determining surplus earnings of the project for the establishment and maintenance of amortization reserves, pursuant to Section 10 (d) of the Act; one-half of the project surplus earnings, if any, accumulated after the first twenty years of operation under the license, in excess of six (6) percent annum on the net investment, shall be set aside in a project amortization reserve account as of the end of each fiscal year, provided that, if and to the extent that there is a deficiency of project earnings below six (6) percent per annum for any fiscal year or years after the first twenty years of operation under the license, the amount of such deficiency shall be deducted from the amount of any surplus earnings accumulated thereafter until absorbed, and one-half of the remaining surplus earnings, if any, thus cumulatively computed, shall be set aside~~

~~in the project amortization reserve account; and the amounts thus established in the project amortization reserve account shall be maintained therein until further order of the Commission.~~

Articles 23 and 24 were not included in the initial license per FPC Order Issuing License (Major) issued July 12, 1962, page 6, paragraph (B).

Article 25. No lease of the project or part thereof whereby the lessee is granted the exclusive occupancy, possession, or use of project works for purposes of generating, transmitting, or distributing power shall be made without the prior written approval of the Commission; and the Commission may, if in its judgment the situation warrants, require that all the conditions of the license, of the Act, and of the rules and regulations of the commission shall be applicable to such lease and to such property so leased to the same extent as if the lessee were the Licensee: Provided, that the provisions of this article shall not apply to parts of the project or project works which may be used by another jointly with the Licensee under a contract or agreement whereby the Licensee retains the occupancy, possession, and control of the property so used and receives adequate consideration for such joint use, or to leases of land while not required for purposes of generating, transmitting, or distributing power, or to buildings or other property not built or used for said purposes, or to minor parts of the project or project works, the leasing of which will not interfere with the usefulness or efficient operation of the project by the Licensee for such purposes.

Article 26. The Licensee, its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties necessary or useful to the project and to the development, transmission, and distribution of power therefrom will be voluntarily sold, transferred, abandoned, or otherwise disposed of without the approval of the Commission: Provided, that a mortgage or trust deed or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article. In the event the project is taken over by the United States upon the termination of the license, as provided in Section 14 of the Act, or is transferred to a new licensee under the provisions of Section 15 of the Act, the Licensee, its successors and assigns will be responsible for and will make good any defect of title to or of right of user in any of such project property which is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and will pay and discharge, or will assume responsibility for payment and discharge, of all liens or incumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, that the provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear, or to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to or right of user in any of such project property than was necessary to acquire for its own purposes as Licensee.

Article 27. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

Articles 28 – 47 are listed in FPC Order Issuing License (Major) issued July 12, 1962

Article 28. The Licensee shall commence construction of the project works not later than ~~August 1, 1963~~ July 31, 1965, shall thereafter in good faith and with due diligence prosecute such construction, and shall complete construction of such project works not later than ~~June 1, 1967~~ September 1, 1970.

The dates in Article 28 were amended per FPC Order Extending Time for Commencement and Completion of Project Construction issued August 16, 1963.

Article 29. The Licensee shall submit, in accordance with the Commission's rules and regulations, Exhibit L drawings showing the design of the project structures for Commission approval prior to commencement of construction.

Article 30. The Licensee shall, within one year from the date of completion of the project, file with the Commission revised Exhibit F and K to show and describe the entire project, including transmission lines.

Article 31. The Licensee shall prior to flooding, clear all lands in the bottoms and margins of the reservoir up to the high water level which shall be defined as the higher of the following:

(i) A line five feet above the backwater profile under average flow conditions (102,000 cfs for Columbia River; 2,900 cfs for Okanogan River; and 1,300 cfs for Methow River), or
(ii) The backwater profile for the one in ten year flood (500,000 cfs for Columbia; 30,000 cfs for Okanogan River; and 21,000 cfs for Methow River).

The Licensee shall dispose of all temporary structures, unused timber, brush, refuse, or inflammable material resulting from clearing of the lands or from the construction and maintenance of the project works. In addition, all trees along the margins of the reservoir which may die during operation of the project shall be removed. The clearing of the lands and the disposal of the material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission.

Article 32. With respect to compensation to the United States for the losses caused to the Chief Joseph Project by encroachment upon its tailwater by the operation of the Licensee's project:

(i) The licensee shall, prior to beginning of operation of the Wells power plant, enter into an agreement with the Chief of Engineers, Department of the Army, or his designated representative, to compensate the United States for encroachment on the Chief Joseph Project resulting from the operation of the Wells Project. The agreement will provide for replacement of power loss at Chief Joseph in time and kind, unless otherwise mutually agreed. The loss will be computed on the basis of using the same quantity of water at any given time through the units of the Chief Joseph powerhouse with and without the Wells Project. The difference in power output will be the loss to be replaced. In any computation pertaining to the power loss, the generating capacity will be limited to 125 percent of nameplate rating. The turbine and generator

units to be used in computing the loss will be those in existence at Chief Joseph at the time the Wells Project is licensed, and

(ii) The licensee also shall compensate the United States for the increased cost of future turbines, units 17 through 27, required to generate the same power under reduced head conditions as a result of the encroachment of the Wells pool on Chief Joseph tailwater. Such compensation will be a capital sum of $294,000 payable to the Treasurer of the United States on or before operation of the initial installation at the Wells Project.

Article 33. The Licensee shall not operate the Wells Project in such a manner as to prevent the operation of the Priest Rapids Project No. 2114 in compliance with Article 45 of the license for that project respecting minimum flows at the Hanford Works of the Atomic Energy Commission.

Article 34. Each year before the beginning of flood runoff, the District Engineer, Corps of Engineers, in charge of the locality, shall inform the Licensee of the storage space to be provided in the Wells Project reservoir to compensate approximately for valley storage that may be expected to be lost during the ensuing flood season. The Licensee shall without cost to the United States provide this storage space in accordance with the following general procedures:

(i) The amount of storage space to be provided by the licensee will vary from zero acre-feet for a forecasted peak flow of 500,000 second-feet at The Dalles, Oregon, to approximately 125,000 acre-feet for a forecasted peak flow of 1,100,000 second-feet at The Dalles, the forecasted flows to be as regulated by storage existing at the time of license. To the extent feasible, and in order to minimize the duration of the drawdown of the Wells reservoir for valley storage replacement, the drawdown will be ordered by the District Engineer, not earlier than two weeks before the predicted date on which the observed flow at The Dalles is forecasted to equal or exceed 500,000 cfs and refill will be directed by the District Engineer generally within one week after voluntary filling of Grand Coulee Reservoir for flood control purposes is initiated.

(ii) Detailed procedures for use of the valley storage replacement in the Wells reservoir will be included in a regulation manual to be prepared by the District Engineer.

Article 35. The Licensee shall, prior to commencement of construction of the project, consult with the District Engineer, Corps of Engineers, in charge of the locality with regard to provision to be made for the future construction of navigation facilities.

Article 36. The Licensee shall, for the protection of navigation, construct, maintain, and operate at its expense such lights and other signals on fixed project structures in or over navigable water of the United States as may be directed by the Commission upon recommendation by the Secretary of the Department in which the Coast Guard is operating.

Article 37. The Commission expressly reserves the right to determine at a later date what additional transmission lines and appurtenant facilities, if any, shall be included in the license as part of the project works.

Article 38. The Licensee shall use the improved streamflow from Canadian storage projects for power production purposes, and make available to the Federal system for delivery to Canada, or for its account, the project's share of coordinated system benefits resulting from such improved streamflows, both dependable hydroelectric capacity and average annual usable hydroelectric energy, as determined to be due to Canadian interests under the procedures established pursuant to any treaty between the United States and Canada relating to cooperative development of water resources of the Columbia River Basin.

Article 39. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, the benefits of which shall be shared equitably by the participants in such coordination.

Article 40. The Licensee shall not make any claim under the authority of this license against the United States or any water users' organization claiming through the United States for any damage resulting from any future depletion in the flow of the waters of the Columbia River and its tributaries for the irrigation of lands and other beneficial consumptive uses.

~~Article 41. The Licensee shall construct, maintain and operate such protective devices and shall comply with such reasonable modifications of the project structures and operation in the interest of fish and wildlife resources, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may be prescribed hereafter by the Commission upon its own motion or upon recommendation of the Secretary of the Interior or the Washington State Departments of Fisheries and Game after notice and opportunity for hearing and upon a finding that such modifications are necessary and desirable and consistent with the provisions of the Act: Provided further, That subsequent to approval of the final design drawings prior to commencement of construction no modifications of project structures in the interest of fish and wildlife resources which involve a change in the location, height or main structure of a dam, or the addition of or changes in outlets at or through a dam, or a major change in generating units, or a rearrangement or relocation of a powerhouse, or major changes in a spillway structure shall be required.~~

Article 41 was amended per FPC Order Amending License (Major) issued September 18, 1962 to read as follows:

Article 41. The Licensee shall construct, maintain and operate such protective devices and shall provide such measures and facilities for mitigating losses to fish and wildlife resources as may result from project construction, alteration, or operation and shall comply with such reasonable modifications of the project structures and operation in the interest of fish and wildlife resources, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may be prescribed hereafter by the Commission upon its own motion or upon recommendation of the Secretary of the Interior or the Washington State Departments of Fisheries and Game after notice and opportunity for hearing and upon a finding that such modifications are necessary and desirable and consistent with the provisions of the Act: Provided further, That subsequent to approval of the final design drawings prior to commencement of

construction no modifications of project structures in the interest of fish and wildlife resources which involve a change in the location, height or main structure of a dam, or the addition of or changes in outlets at or through a dam, or a major change in generating units, or a rearrangement or relocation of a powerhouse, or major changes in a spillway structure shall be required.

Note: FERC Order Modifying License Article issued February 24, 1989 requires "the filing of an annual progress report of the licensee's wildlife mitigation program no later than October 1 of each year." Information pertaining to this program is detailed in the settlement agreement dated July 15, 1974 and filed on July 19, 1974 between Douglas PUD and the State of Washington Department of Game.

Article 42. Whenever the United States shall desire, in connection with the project, to construct fish handling facilities or to improve the existing fish handling facilities at its expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of Licensee's lands and interest in lands, reservoirs, waterways and project works as may be reasonably required to complete such fish handling facilities or such improvements thereof. In addition, after notice and opportunity for hearing the Licensee shall modify the project operation as may be prescribed by the Commission, consistent with the primary purpose of the project, in order to permit the maintenance and operation of the fish handling facilities constructed or improved by the United States under the provision of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish handling facilities or to relieve the Licensee of any obligation under this license.

Article 43. The Licensee shall upon written request of the Commission make available to the Secretary of the interior and the Washington State Departments of Fisheries and Game funds not to exceed a total of $139,500 for the purpose of making investigations to determine the measures required for preventing and mitigating losses to fish and wildlife which may result from project construction or alteration and for making post flooding investigations to determine the effects of actual project construction on fish and wildlife. The Licensee shall make available such additional funds as may be agreed upon by the Licensee, the Secretary of the Interior and the Washington Departments of Fisheries and Game, in the event the project is delayed by amendment of the license extending the date of completion. In the event the Licensee and the agencies herein named fail to reach agreement on the amount of funds, if any, to be made available by the Licensee in addition to the $139,500 herein provided, the Commission may, after notice and opportunity for hearing, determine the amount, if any, the Licensee shall pay to reimburse the agencies named herein on account of delay of the completion of the project; Provided, however, that the Licensee shall not be responsible for any costs of any studies conducted after five years following the date of impoundment of the project waters.

Article 44. The Licensee shall cooperate with the Secretary of the interior in the preparation of a public use plan for the area and in the possible salvage of archeological data and shall, upon written request of the Commission, make available to the Secretary, or to a qualified agency designated by the Secretary, reasonable amounts of monies not to exceed a total of $10,000 in the preparation of a public use plan and not to exceed a total of $55,000 to compensate for expenses incurred in archeological investigations in the pool area.

Article 45. The Licensee shall install additional capacity and make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so, after notice and opportunity for hearing.

Article 46 of the license initially read as follows:

~~Article 46. The Licensee shall pay to the United States the following annual charges:~~

~~(i) For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable annual charge in accordance with the provisions of Part II of the Commission's regulations as in effect from time to time. The authorized installed capacity for such purpose is 659,000 horse-power.~~

~~(ii) For the purpose of recompensing the United States for the use, occupancy, and enjoyment of its lands, including those used for transmission-line right-of-way, an amount to be determined hereafter by the Commission.~~

~~(iii) For the use of tribal lands embraced within the Colville Indian Reservation, such reasonable charge (which may include electric service) as may hereafter be specified by the Commission, subject to the approval of the Indian tribe having jurisdiction over such lands as provided by law.~~

Article 46 (i) was modified to change "Part II" to read "Part 11" per FPC Erratum Notice issued August 10, 1962.

Article 46(i) was also modified to show 723,000 horsepower as the authorized installed horsepower capacity of the project for annual charge purposes per FPC Order Approving Revised Project Exhibits and Adjusting Authorized Installed Capacity and Annual Charges issued April 17, 1964

Article 46 (i) was further modified to show 1,032,000 horsepower per FPC Order Approving Revised Project Exhibits and Adjusting Initial Authorized Installed Capacity and Annual Charges issued February 2, 1965.

Article 46 (ii) was modified per FPC Order Approving Revised Exhibit K Drawings For Project And Fixed Annual Land Charges issued September 24, 1971. This order removed the words "including those used for transmission-line right-of-way, an amount to be determined hereafter by the Commission" and added "used for project purposes, $541.20."

Article 46 was further modified per FERC Order Approving As-Built Exhibits J and K and Amending License issued January 5, 1979 to read as follows:

Article 46. The Licensee shall pay the United States the following annual charge, effective September 1, 1967 (the date that power from the project was first sold for profit):

(a) For the purpose of reimbursing the United States for the cost of administration of Part 1 of the Act, a reasonable annual charge as determined by the Commission in accordance with the provisions of its regulations, in effect from time to time. The authorized installed capacity for

that purpose is 1,032,000 horsepower;

(b) For the purpose of recompensing the United States for the use, occupancy, and enjoyment of 225.50 acres of its lands, exclusive of transmission line rights-of-way, an amount as may be determined from time to time pursuant to the Commission's regulations;

(c) For the purpose of recompensing the United States for the use, occupancy, and enjoyment of 7.22 acres of its lands for transmission line right-of-way purposes, an amount as may be determined from time to time pursuant to the Commission's regulations;

(d) For the use of tribal lands embraced within the Colville Indian Reservation, such reasonable charge (which may include electric service) as may hereafter be specified by the Commission, subject to the approval of the Indian tribe having jurisdiction over such lands as provided by law.

Article 46 was modified per FERC Order Approving Settlement, Amending License, and Granting Approval Under Section 22 of the Federal Power Act issued February 11, 2005. This order states that that "Article 46, subpart (iii), of license for the Wells Project No. 2149, issued July 12, 1962, is amended to read as follows:"

(iii) For the use of tribal lands embraced within the Colville Indian Reservation, compensation to The Confederated Tribes of the Colville Reservation pursuant to the terms of the Colville Settlement Agreement and the Colville Power Sales Contract, dated August 18, 2004, between Douglas County Public Utility District No. 1 and The Confederated Tribes of the Colville Reservation, and filed with the Commission November 23, 2004, constitutes payment in full.

Article 47. For benefits made available to the Licensee by upstream storage improvements located in the United States and owned by the United States or its licensees, the licensee shall pay annual charges computed as follows:

The annual cost of interest, maintenance, and depreciation on the dam and reservoir of each headwater improvement project, to be borne by power both at-site and downstream, is to be apportioned to storage and head functions. The amount of such cost to be apportioned to the storage function shall be determined by multiplying such total cost by the ratio of the average power (at-site and downstream) from at-site storage during the critical period to the sum of the average power (at-site and downstream) from at-site storage during the critical period and the total average power at-site (from natural flow and from at-site and upstream storage) during the critical period. The amount of such annual cost of the headwater improvement thus apportioned to the storage function shall be apportioned to the at-site power plant and to each downstream plant in direct proportion to the average power from at-site storage at each plant during the critical period. The annual costs thus apportioned to Project No. 2149 shall be the annual payment to be made for headwater benefits; provided that the Commission may on its own motion or upon a request by the Licensee or any party adjust such amounts, or prescribe another and different formula or procedure to determine the annual payment for future years, after notice and opportunity for hearing; and provided, further, that if the Federal Power Act is amended with respect to headwater benefit payments, the Commission may determine the payments due under this license in accordance with the Act as amended.

The annual charges as computed under this article shall become effective on the date of commercial operation of the fourth unit of the initial installation of seven units authorized herein and shall be paid within 30 days of rendition of a bill therefore by the Commission. In the event payment is not made within 30 days from the date of the billing, the amount billed and unpaid shall be increased at the rate of 7 percent per annum until paid.

(c) The exhibits designated and describe in finding (2) above are hereby approved as part of the license for the project.

(d) This order shall become final 30 days from the date of its issuance unless application for rehearing shall be filed as provided in Section 313 (a) of the Act, and failure to file such an application shall constitute acceptance of this license. In acknowledgement of the acceptance of this license, it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

Article 48 (below) was tendered to Douglas PUD in a letter from William W. Lindsay, FERC Director of Office of Electric Power Regulation, dated June 18, 1980. By Douglas PUD Resolution No. 81-4 approved January 5, 1981 and by letter to FERC Secretary Kenneth F. Plumb by Douglas PUD Manager Fred Lieberg dated January 5, 1981, Article 48 was accepted by Douglas PUD and became a part of the license.

Article 48. (a) In accordance with the provisions of this article, the Licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The Licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the Licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the Licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the Licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the Licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants

permission are maintained in good repair and comply with applicable State and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the Licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the Licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the Licensee's costs of administering the permit program. The Commission reserves the right to require the Licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modifications of those standards, guidelines, or procedures.

(c) The Licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary State and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kv or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The Licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary State and Federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary Federal and State water quality certificates or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary Federal and State approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d) (7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the Licensee must file a letter to the Director, Office of Electric Power Regulation, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any Federal or State agency official consulted, and any Federal or State approvals required for the proposed use. Unless the Director, within 45 days from the filing

date, requires the Licensee to file an application for prior approval, the Licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraphs (c) or (d) of this article:

(1) Before conveying the interest, the Licensee shall consult with Federal and State fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the Licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values.

(4) The Commission reserves the right to require the Licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

Articles 49 – 58 were added to the license by FERC Order Amending License (Major) issued September 23, 1982

Article 49. The Licensee shall continue to cooperate with the Washington State Historic Preservation Officer (SHPO) to carry out a data recovery program, as concurred in by the Advisory Council on Historic Preservation, for mitigating adverse impacts on the Lake Pateros Archeological District. The Licensee shall make available funds in a reasonable amount for the

data recovery and reporting measures required. If any previously undiscovered archeological sites are found during the increase in reservoir elevation and its associated activities at the project, those activities shall be halted, a qualified archeologist shall be consulted to determine the significance of the resources, and the Licensee shall consult with the SHPO to develop a mitigation plan for the protection of significant archeological resources. If the Licensee and the SHPO cannot agree on the amount of money to be expended on historical and archeological work at the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any such work found necessary.

Article 50. Licensee shall, in consultation with the U.S. Soil Conservation Service, investigate and identify all non-project lands and structures, including the Brewster swimming pool, that will be adversely impacted by an increase in the Wells Project Reservoir to elevation 781 feet msl, and within 6 months from the date of this order, file with the Commission a report on its findings, and for approval, specific recommendations, with an implementation schedule, for measures required to mitigate any adverse impacts.

Article 51. The Licensee shall, in consultation with the National Park Service of the U.S. Department of the Interior, the State of Washington Parks and Recreation Commission, and other interested Federal, State, and local agencies, conduct a study of the need, if any, for providing additional public recreational facilities at Project No. 2149, and within 6 months from the date of issuance of this order, file with the Commission the results of the study and for approval, a Report on Recreational Resources for the project that conforms to §4.51(f)(5) of the Commission's regulations.

Article 52. The Licensee shall, prior to the raising of the water surface elevation of the project reservoir, enter into an agreement with the Chief of Engineers, Department of the Army, or his designated representative, to compensate the United States for encroachment at the Chief Joseph Dam resulting from the higher normal water surface elevation of the Wells Project. A copy of the signed agreement shall be filed with the Director, Office of Electric Power Regulation and the San Francisco Regional Engineer. In the event that the parties cannot reach agreement on the compensation to be provided for head encroachment at Chief Joseph Dam, the compensation to be provided by Licensee shall be determined by the Director, Office of Electric Power Regulation prior to raising the operating level of the Wells Reservoir.

Article 53. The Licensee shall submit, for approval, in accordance with the Commission's rules and regulations, revised Exhibit L drawings with supporting design reports showing the stability analysis for the hydrocombine and earth embankment structures within 90 days from the issuance date of this order.

Article 54. The Licensee shall submit for Commission approval a plan and schedule for determining the magnitude and distribution of uplift pressures in the foundation and at the rock concrete interface of the Wells Dam. This plan shall include the procedures and a description of the instrumentation to be used to determine the uplift pressure distribution, both parallel and perpendicular to the axis of the dam, and shall include a monitoring program to detect any changes in the magnitude or distribution of the pressure. The plan shall be submitted within 180 days from the issuance of this order.

Article 55. The Commission reserves the authority to order, upon its own motion or upon the recommendation of Federal or State fish and wildlife agencies or affected Indian Tribes, alterations of project structures and operations to take into account to the fullest extent practicable the regional fish and wildlife program developed pursuant to the Pacific Northwest Electric Power Planning and Conservation Act.

Article 56. The Licensee shall submit for approval, in accordance with the Commission's rules and regulations, revised Exhibit K drawings showing the increase in normal operating pool level of the Wells Reservoir.

Article 57. Within 60 days from the issuance of this order, after consultation with the U.S. Fish and wildlife Service and the Washington Department of Game. Licensee shall file for Commission approval a wildlife improvement plan to mitigate the impacts on wildlife from raising the project reservoir.

Article 58. The Licensee shall institute a program to provide for the periodic inspection, maintenance and monitoring of the hydrocombine drainage system to ensure that all drains are operating efficiently and to determine that the uplift pressures are within design assumptions. An annual report summarizing and analyzing the results of the program shall be submitted to the San Francisco Regional Engineer and to the Director, Office of Electric Power Regulation. Any nonfunctioning drain shall be replaced to the satisfaction of and within the time specified by the Commission's authorized representative.

Articles 59 – 63 were added to the license by FERC Order Amending License issued June 21, 2004.
Note: FERC Order on Rehearing issued November 23, 2004 clarified that approval of the Anadromous Fish Agreement and Habitat Conservation Plan superseded the Wells Settlement Agreement (approved by FERC on January 24, 1991). A May 11, 2005 letter from FERC acknowledged receipt of Douglas PUD's final Annual Report on activities related to the Wells Settlement Agreement.

Article 59. (a) The licensee shall carry out its obligations as set forth in the Anadromous Fish Agreement and Habitat Conservation Plan (HCP Agreement) for the Wells Hydroelectric Project No. 2149 filed with the Commission on November 24, 2003, and as approved by the Commission at 107 FERC ¶ 61,280 and ¶ 61,283. Further, the licensee shall file with the Commission (1) the final annual and comprehensive progress reports developed pursuant to the HCP Agreement; and (2) the final results of all studies and testing pursuant to the HCP Agreement.

(b) Prior to taking any action pursuant to the HCP Agreement that requires a change in the authorized project facilities or operations not specifically identified in the HCP Agreement, the licensee shall file a license amendment application.

(c) The licensee shall file design drawings prior to the implementation of any modification or addition to project works that is necessary to implement the HCP Agreement. The licensee shall file such design drawings for Commission approval at least 90 days prior to the start of

construction or modification. The licensee will file as-built drawings with the Commission within 6 months after the completion of construction or modification.

Article 60. The licensee, prior to the commencement of any ground-disturbing activity at the Project site or on non-federal lands pursuant to the Tributary Conservation Plan provisions of the Habitat Conservation Plan Agreement approved by the Commission at 107 FERC ¶ 61,280 and ¶ 61,283, shall consult with the Washington State Historical Preservation Officer (SHPO) and potentially affected Indian tribes about the need for a cultural resources survey. For this purpose, the licensee shall within 90 days prepare and provide to the SHPO and potentially affected Indian tribes a map delineating the Area of Potential Effect as defined in 36 C.F.R. § 800.16(d), and the map shall include potential geographical scope of actions under the Tributary Conservation Plan. If any previously unrecorded archeological or historical sites are discovered during the course of such survey or activity, ground-disturbing activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the licensee shall consult with the SHPO and tribes to develop a mitigation plan for the protection of significant archeological or historical resources. The Commission reserves authority to resolve any disputes between the licensee and the consulted entities.

Article 61. *Bull Trout – Reasonable and Prudent Measures and Terms and Conditions*. (a) Within six months of the issuance of the order amending license issued at 107 FERC ¶ 61,283 (2004), the licensee shall file for Commission approval a plan to implement the Reasonable and Prudent Measures and associated Terms and Conditions said order. The plan shall include provisions for the annual report required by Article ~~412~~ 62. The plan shall be prepared in consultation with the U.S. Fish and Wildlife Service, NOAA Fisheries, Washington Department of Fish and Wildlife, and interested Indian tribes.

(b) The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the consulted entities, and specific descriptions of how the entities' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reason's based on project-specific information.

(c) The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the licensee is notified by the Commission that the plan is approved. Upon approval of the plan, the licensee shall implement the plan, including any changes required by the Commission.

So that the Commission can keep apprised of the licensee's bull trout activities, the licensee shall file, with the Commission, an interim summary report and final take monitoring report at the same time it files the reports with the U.S. Fish and Wildlife Service. The interim summary report shall be filed by March 31 for the prior year's activities and a final take monitoring report shall be filed by December 31, 2008, which includes a six year average annual take level for the project.

Notes:

FERC Order Granting Extension of Time Under Article 61 issued January 6, 2005 extended "the deadline to file a bull trout monitoring plan in accordance with article 61 of the license" to February 28, 2005.

FERC Order Modifying and Approving Bull Trout Management Plan Under Article 61 issued April 19, 2005 added new language to Article 61 (last paragraph).

FERC Order issued June 21, 2004 refers to an "Article 412" within paragraph (a) of Article 61. FERC Errata Notice issued June 14, 2005 corrects paragraph (a) of Article 61 to reference Article 62 instead of Article 412.

Article 62. *Annual Reports – Implementation of Reasonable and Prudent Measures*. (a) The licensee shall prepare and file with the Commission an annual report describing the impacts of the Reasonable and Prudent Measures and associated Terms and Conditions prescribed by the U.S. Fish and Wildlife Service for the protection of bull trout. The report shall also be submitted to the Central Washington Field Office of the U.S. Fish and Wildlife Service and shall list and describe any adverse effects resulting from project activities on bull trout, including the number and life stages of individuals affected.

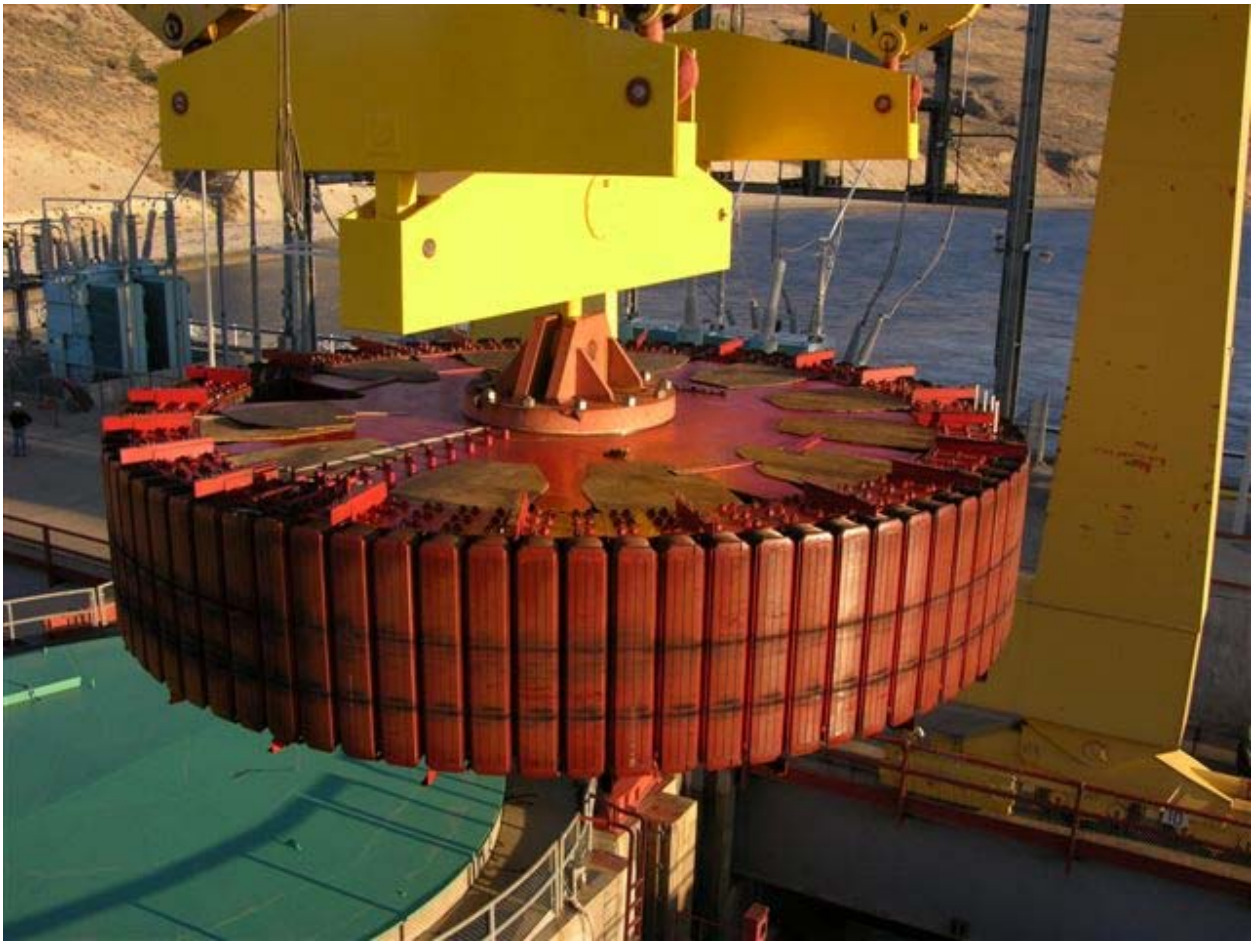
(b) Upon locating a dead, injured, or sick endangered or threatened species specimen, the licensee shall initially notify the Central Washington Field Office (Wenatchee, Washington; telephone 509-664-0658) within 48 hours. The licensee shall take care in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species or preservation of biological materials from a dead animal, the licensee shall carry out instructions provided by the Service to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Article 63. *Reservation of Authority – Bull Trout Recovery Plan.* Authority is reserved to the Commission to require the licensee to carry out specified measures for the purpose of participating in the development and implementation of a bull trout recovery plan.

WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT C - CONSTRUCTION HISTORY



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May 2010

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EXHIBIT C - CONSTRUCTION HISTORY

The following excerpt from the Code of Federal Regulations (CFR) at 18 CFR § 4.51 (d) describes the required content of this Exhibit.

(d) Exhibit C is a construction history and proposed construction schedule for the project. The construction history and schedules must contain:

(1) If the application is for an initial license, a tabulated chronology of construction for the existing projects structures and facilities described under paragraph (b) of this section (Exhibit A), specifying for each structure or facility, to the extent possible, the actual or approximate dates (approximate dates must be identified as such) of:

(i) Commencement and completion of construction or installation;

(ii) Commencement of commercial operation; and

(iii) Any additions or modifications other than routine maintenance; and

(2) If any new development is proposed, a proposed schedule describing the necessary work and specifying the intervals following issuance of a license when the work would be commenced and completed.

1.0 CONSTRUCTION HISTORY OF EXISTING STRUCTURES AND FACILITIES

Wells Dam consists of a west embankment, a central concrete structure, and an east embankment. The central concrete structure, referred to as a "hydrocombine," includes the generating units, spillways, switchyard and fish passage facilities, uniquely integrated into a single structure. The Wells Hydroelectric Project (Project) also includes a forebay, reservoir, tailrace, switchyard, high-voltage transmission lines, recreation facilities and lands within the Wells Project Boundary.

The Wells Project was constructed between 1963 and 1967. On July 12, 1962, the Federal Power Commission (FPC), predecessor to the Federal Energy Regulatory Commission (FERC), granted Public Utility District No. 1 of Douglas County (Douglas PUD) a 50-year license to construct and operate the Wells Project. The initial design and license for the Wells Project called for the installation of seven turbine-generator units. Construction of the Wells Project began in the fall of 1963. On February 2, 1965, the FPC approved Douglas PUD's application to amend the original license to include three additional generating units. Commercial operation of the originally-designed seven-unit Wells Project began on September 1, 1967. The three additional units were in commercial operation by January 24, 1969.

On April 26, 1981, Douglas PUD filed an application for a license amendment to raise the elevation of the Wells Reservoir from 779 to 781 feet. On September 23, 1982, FERC issued an order amending the License and added Articles 49 through 58 in response to that application.

From 1987 through 1990, the 10 original Allis-Chalmers turbine runners were replaced with new, high-efficiency turbine runners manufactured by Fuji Electric. Recent modifications consist of the construction in 1992 of a diaphragm cutoff wall through the East Embankment to the bedrock in order to repair a sinkhole discovered in 1990. Governor upgrades were completed in 2000 for all 10 units. Additional monitoring equipment was installed, and since repaired no additional seepage has been detected. Replacement of the original substations, manufactured by the Federal Pacific Electric Company, was completed in 2004. Additionally, the Federal Pacific Electric Company circuit breakers and breaker panels in each substation were replaced with breakers manufactured by Asea Brown Boveri Ltd (ABB). In 2005, the generator winding and core of Unit No. 1 was damaged beyond repair by an electrical fault. The generator was rebuilt and returned to service. A contract has been awarded to rebuild the remaining nine generators and to refurbish all 10 turbines over a period of eight years. A debris boom was installed at the Project in early 2009 to replace the safety boom. The boom extends approximately 1,100 feet into the forebay and helps protect the Project from floating debris flushed down the river, primarily during spring floods.

In addition to Project construction, Douglas PUD funded the construction of the Wells and Methow fish hatcheries. The Wells Hatchery is located adjacent to the Wells Dam and was constructed in 1967. The construction of the Methow Hatchery in 1992 was funded by Douglas PUD as a result of a Long-Term Fish Settlement Agreement to mitigate for unavoidable juvenile fish passage losses at the Wells Project.

2.0 PROPOSED CONSTRUCTION SCHEDULE FOR IMPROVEMENTS

Douglas PUD is not proposing any new generation facilities. Non-generating facilities proposed to be constructed during the term of the new license include: (1) Douglas PUD's participation in a white sturgeon hatchery and rearing facility; (2) new interpretive displays, located within the Project Boundary but away from critical energy infrastructure; (3) major redesign and construction of new facilities and rehabilitation of aging infrastructure located at the Wells and Methow fish hatcheries, as directed by National Marine Fisheries Service (NMFS) requirements for Upper Columbia River spring Chinook salmon and Upper Columbia River steelhead Hatchery and Genetic Management Plans (HGMPs); and (4) the construction of additional Project-related recreation facilities.

2.1 White Sturgeon Hatchery

The Aquatic Settlement Agreement (ASA) for the Wells Project includes plans to implement a comprehensive White Sturgeon Management Plan (Exhibit E; Appendix E-2). As part of the WSMP, Douglas PUD will supplement the white sturgeon population in the Wells Reservoir. In order to supplement the sturgeon population within the Wells Reservoir, Douglas PUD will participate in a regional white sturgeon hatchery.

2.2 Wells Dam Overlook Interpretive Displays

The Wells Dam Visitor Center, previously located inside the Wells Dam, has been closed to the public since 2001 due to security concerns. Douglas PUD is proposing to construct a new Visitor Interpretation Facility to be located on lands owned by Douglas PUD at the access point to the Wells Dam in the vicinity of the current Wells Dam Overlook. Exhibits to be provided at the new facility may include, but are not limited to, power generation, the history of Wells Dam, benefits of hydropower, fish and wildlife, and recreation. A live video feed of the Wells Project fish ladder will also be provided at the facility (Exhibit E; Appendix E-5).

2.3 Boat-in Tent Camping Facilities and Signage

The Recreation Needs Analysis (DTA, 2008) identified a need to improve access for non-motorized boat users. The study further identified potential opportunities for coordination with the Greater Columbia Water Trail (GCWT) Coalition so that non-motorized boat-in camping facilities would be consistent with other sections of the Columbia River.

To accommodate non-motorized boat users, Douglas PUD will implement several measures to improve access for non-motorized boaters, including installing GCWT signs and informational material at appropriate Wells Project recreational access facilities; providing information on portaging around Wells Dam; constructing a formal boat-in tent camping facility in the vicinity of the Okanogan River, including restroom and picnic shelter; and designating and providing basic improvements for an informal/rustic boat-in

tent camping location on the west side of the river within several miles of Wells Dam (Exhibit E; Appendix E-5).

2.4 Marina Park Expansion

The Recreation Needs Analysis (DTA 2008) indicates Marina Park in Bridgeport receives the most visitation of any location on the Wells Project. Marina Park is often filled to capacity during peak recreation season. To accommodate increasing use, Douglas PUD will expand Marina Park to include an additional 10 recreation vehicle (RV) spaces north along the river within Project Boundary. The expansion will include all facilities needed to accommodate recreation use associated with 10 additional RV spaces, including restroom facilities, lift stations, landscaping and access roads (Exhibit E; Appendix E-5).

2.5 Wells and Methow Hatchery Upgrades

HGMPs are used to address the take of ESA-listed species that may occur as a result of artificial propagation activities. The primary goal of an HGMP is to devise biologically-based artificial propagation management strategies that ensure the conservation and recovery of ESA listed stocks of salmon and steelhead. In 2010, the NMFS required Douglas PUD and the HCP Hatchery Committee to develop new HGMPs for ESA-listed Upper Columbia River spring Chinook salmon and Upper Columbia River steelhead. These new HGMPs require substantial modifications and upgrades to the facilities and operations at the Methow and Wells fish hatcheries (Exhibit E; Appendix E-9).

2.6 Additional Recreational Facilities

The Chicken Creek Boat Launch is located on Washburn Pond within the Wells Project Boundary. Washburn Pond is hydraulically isolated from the Wells Reservoir. Lower pond levels on Washburn Pond are often observed in the fall season, and public access can be restricted due to the short length of the launch. Douglas PUD will place additional concrete planks at the end of the launch in order to extend the launch for improved access during the fall season (Exhibit E; Appendix E-5).

For the term of the new license, Douglas PUD will continue to ensure the operation and maintenance of all of the Wells Project recreation facilities. Administration, operation, and maintenance activities will include, but are not limited to, maintaining parking areas, lawns, restrooms, lights, water, power, sewer/septic, playground equipment, shelters, and playfields.

WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT D - STATEMENT OF COSTS AND FINANCING

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May 2010

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EXHIBIT D - STATEMENT OF COSTS AND FINANCING

The following excerpt from the Code of Federal Regulations (CFR) at 18 CFR § 4.51(e) describes the required content of this Exhibit.

Exhibit D is a statement of costs and financing. The statement must contain:

(1) If the application is for an initial license, a tabulated statement providing the actual or approximate original cost (approximate costs must be identified as such) of:
- *(i) Any land or water right necessary to the existing project; and*
- *(ii) Each existing structure and facility described under paragraph (b) of this section (Exhibit A).*

(2) If the applicant is a licensee applying for a new license, and is not a municipality or a state, an estimate of the amount which would be payable if the project were to be taken over pursuant to section 14 of the Federal Power Act upon expiration of the license in effect [see 16 U.S.C. 807], including:
- *(i) Fair value;*
- *(ii) Net investment; and*
- *(iii) Severance damages.*

(3) If the application includes proposals for any new development, a statement of estimated costs, including:
- *(i) The cost of any land or water rights necessary to the new development; and*
- *(ii) The cost of the new development work, with a specification of:*
  - *(A) Total cost of each major item;*
  - *(B) Indirect construction costs such as costs of construction equipment, camps, and commissaries;*
  - *(C) Interest during construction; and*
  - *(D) Overhead, construction, legal expenses, taxes, administrative and general expenses, and contingencies.*

(4) A statement of the estimated average annual cost of the total project as proposed specifying any projected changes in the costs (life-cycle costs) over the estimated financing or licensing period if the applicant takes such changes into account, including:
- *(i) Cost of capital (equity and debt);*
- *(ii) Local, state, and Federal taxes;*
- *(iii) Depreciation and amortization;*
- *(iv) Operation and maintenance expenses, including interim replacements, insurance, administrative and general expenses, and contingencies; and*
- *(v) The estimated capital cost and estimated annual operation and maintenance expense of each proposed environmental measure.*

(5) A statement of the estimated annual value of project power, based on a showing of the contract price for sale of power or the estimated average annual cost of obtaining an equivalent amount of power (capacity and energy) from the lowest cost alternative source, specifying any projected changes in the cost of power from that source over the estimated financing or licensing period if the applicant takes such changes into account.

(6) A statement specifying the sources and extent of financing and annual revenues available to the applicant to meet the costs identified in paragraphs (e)(3) and (4) of this section.

(7) An estimate of the cost to develop the license application;

(8) The on-peak and off-peak values of project power, and the basis for estimating the values, for projects which are proposed to operate in a mode other than run-of-river; and

(9) The estimated average annual increase or decrease in project generation, and the estimated average annual increase or decrease of the value of project power, due to a change in project operations (i.e., minimum bypass flows; limits on reservoir fluctuations).

1.0 ORIGINAL COST OF WELLS PROJECT

This application is for a new license, not an initial license. The Public Utility District No. 1 of Douglas County (Douglas PUD) is seeking a new 50-year license to continue operating the existing Wells Hydroelectric Project (No. 2149) (Project) located at river mile (RM) 515.6 on the mainstem Columbia River. Therefore, a tabulated statement of original cost of Project land or water rights, structures, or facilities associated with an initial license is not required for this application.

2.0 WELLS PROJECT TAKEOVER COSTS

Douglas PUD is a municipal corporation of Washington State, and as such, is not subject to Section 14 of the Federal Power Act (FPA), 16 USC § 807, concerning the takeover of a project upon expiration of the license. Therefore, takeover costs are not applicable to this application.

3.0 HISTORIC ANNUAL COST OF PROJECT POWER

For the fiscal years 2003 to 2007, the average annual Historic Power Cost for the Wells Project was $34,129,800 (Table 3.0-1). This includes an average annual cost of $9.6 million associated with implementing the existing Wells Anadromous Fish Agreement and Habitat Conservation Plan (Wells HCP) measures, as approved in 2004.

The generation available for sale from the Project to Douglas PUD and the Power Purchasers is the net generation reduced by the Project's allocation of energy compensating for the Chief Joseph encroachment, allocation to Canadian Entitlement pursuant to the Allocation Extension Agreement, and allocation to the Confederated Tribes of the Colville Reservation (CCT) pursuant to the Colville Power Sales Contract (Table 3.0-2). Project power is sold to Power Purchasers under long-term power sales contracts and to Douglas PUD's Electric Distribution System at the cost of generation. The average cost of generation for sale from the Project for the fiscal years 2003-2007 was $9.81 per megawatt-hour (MWh).

Table 3.0-1 Wells Project historic power costs[1] for fiscal years ended August 31 ($000).

	2003	2004	2005	2006	2007
Operating Expenses					
Production	$9,875	$8,968	$7,707	$8,355	$9,596
Transmission	$1,309	$1,014	$1,328	$1,365	$1,253
Administration and General	$4,829	$4,783	$3,927	$5,577	$5,267
Taxes	$1,117	$1,104	$1,174	$1,182	$1,199
Total Operating Expenses	$17,130	$15,869	$14,136	$16,479	$17,315
Debt Service: Outstanding Bonds	$15,223	$13,892	$15,081	$20,050	$20,548
Plus 10% of Debt Service[2]	$1,522	$1,389	$1,508	$2,005	$2,055
Additional Charges or Credits[3]	$(229)	$129	$(151)	$(1,706)	$(1,596)
Subtotal	$33,646	$31,279	$30,574	$36,828	$38,322
Generation for Sale (000 MWh)	3,396	3,248	3,518	3,571	3,663
Energy Cost ($/MWh)	9.91	9.63	8.69	10.31	10.46

1 Cash basis, excluding depreciation, computed in accordance with the Power Sales Contracts.
2 In accordance with the Wells Project Bond Resolution.
3 In accordance with the Power Sales Contracts.

Table 3.0-2 Wells Project energy available for sale for fiscal years ended August 31 (000 MWh).

	2003	2004	2005	2006	2007
Net Generation[1]	3,890	3,795	4,158	4,213	4,331
Less: Chief Joseph Encroachment	357	345	342	317	361
Exchange[2]	1	-	-	-	-
Generation for Canada[3]	185	219	218	211	204
Colville Power Sales Contract[4]	-	-	72	168	171
Other[2]	(24)	(17)	8	(54)	(68)
Generation for Sale	3,396	3,248	3,518	3,571	3,663
Less: Generation for Canada[5]	25	-	-	-	-
Balance[6]	3,371	3,248	3,518	3,571	3,663

1 Net generation is the Project's gross generation less station service and transmission losses. Variations from year to year reflect actual water conditions.
2 Adjustments made periodically to the generation available for sale from the Wells Project.
3 Amounts required to be delivered to Canada as the Wells Project allocation to Canadian Entitlement pursuant to the Allocation Extension Agreement.
4 Amounts required to be sold pursuant to the Colville Power Sales Contract.
5 Amounts required to be delivered to Canada as the Wells Project allocation to Canadian Entitlement pursuant to the Allocation Agreement which expired on March 31, 2003.
6 Amounts available to the Power Purchasers and Douglas PUD.

4.0 ESTIMATED FUTURE COST OF PROJECT POWER

Douglas PUD developed an estimate of the future cost of Project power by calculating an average annual All-In Cost (AIC) of the Wells Project under the anticipated terms of a new license. The AIC was developed through an analysis of three major areas of cost including the anticipated continuation of Historic Power Costs (Projected Operating Costs), future capital costs associated with the prudent repair and replacement of major equipment and infrastructure (Future R&R Costs), and the anticipated expenditures proposed in the new license for environmental protection, mitigation and enhancement measures (Proposed PM&E Costs).

All estimated costs are presented in 2012 dollars for comparison, regardless of the future year in which expenses would be incurred. Capital expenditures are the actual estimated costs, and do not include any estimates of the additional costs of financing. As a Public Utility District organized under Washington state law, Douglas PUD is required to bond and finance all capital expenditures. In their final environmental document for the proposed action, the FERC will determine appropriate parameters for economic analysis, including interest and insurance rates and term of financing. These parameters will, in turn, determine the estimated additional financing costs for capital expenditures.

The future costs of Wells HCP measures are included as part of the Proposed PM&E Costs. Inclusion of future Wells HCP costs in the Proposed PM&E Costs for relicensing is appropriate because the expenditure of funds to support these measures will take place during the new license term. Additionally, Section 9.5 of the Wells HCP states "[t]his Agreement shall constitute the Parties' terms, conditions and recommendations for Plan Species under Sections 10(a), 10(j) and 18 of the Federal Power Act and the Fish and Wildlife Coordination Act" in connection with Douglas PUD's application for new license during the term of the Wells HCP. Projected Operating Costs are estimated to be $30.4 million per year ($34.1 million Historic Power Cost less $9.6 million Wells HCP costs and escalated to 2012 dollars at 4.4 percent). The lost annual generation of 128,570 MWh related to the operation of the Juvenile Bypass System (JBS), per the Wells HCP, is not included in either the Projected Operating Costs or the Proposed PM&E Costs.

Future R&R Costs include the prudent repair, replacement, and refurbishment of major equipment and infrastructure associated with power generation at Wells Dam. All of these costs are capital costs; future operations and maintenance (O&M) costs are captured in the continuation of Historic Power Costs. These costs were developed based upon a site-specific analysis of the useful life of various parts of the Project coupled with industry standard costs associated with the replacement of major pieces of infrastructure (Devine Tarbell & Associates, Inc. [DTA] 2008). Over a new license term of 50 years, Douglas PUD expects to spend $782 million in Future R&R Costs (Table 4.0-1). Over the term of a 30-year license, Douglas PUD would expect to spend $626 million in Future R&R Costs (Table 4.0-1).

Table 4.0-1 Future repair and replacement capital costs for the Wells Project (in 2012 dollars).

Item	R&R Interval	R&R Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
Generators	30 years	2007-2016; 2037-2042	$225,287,915	$4,505,758	$204,807,195	$6,826,907
Generators Relay and Protection	20 years	2028-2030; 2048-2050	$14,882,769	$297,655	$7,441,384	$248,046
Turbine Runner Components	20 years	2008-2016; 2028-2032; 2048-2052	$199,677,150	$3,993,543	$133,118,100	$4,437,270
Governors and Station Controls	20 years	2018-2019; 2038-2039; 2058-2059	$32,370,022	$647,400	$ 21,580,015	$719,334
Transmission Line	50 years	2018-2020	$57,298,660	$1,145,973	$ 57,298,660	$1,909,955
Switchyard Structures	50 years	2018-2020	$11,658,169	$233,163	$ 11,658,169	$388,606
Transformers	40 years	2012-2014; 2054-2056	$32,494,046	$649,881	$ 16,247,023	$541,567
Intake and Spillway Gates	50 years	2018-2022	$66,352,345	$1,327,047	$ 66,352,345	$2,211,745
Dam, Apron and Embankments	60 years	2028-2032	$62,011,537	$1,240,231	$ 62,011,537	$2,067,051
Balance of Plant Support	25 years	2033-2037; 2058-2062	$14,386,677	$287,734	$7,193,338	$239,778
Fish Pumps	60 years	2028-2032	$3,720,692	$74,414	$3,720,692	$124,023
Debris Boom	40 years	2048	$8,805,638	$176,113	N/A	N/A
Electrical and Mechanical	20 years	2013; 2033; 2053	$7,441,384	$148,828	$4,960,923	$165,364
Computer Control	10 years	2018; 2028; 2038; 2048; 2058	$6,201,154	$124,023	$3,720,692	$124,023
Communication	10 years	2018; 2028; 2038; 2048; 2058	$3,720,692	$74,414	$2,232,415	$ 74,414
Maintenance and Administration Facilities	40 years	2048	$6,201,154	$124,023	N/A[1]	N/A[1]
HVAC	20 years	2028; 2048	$2,480,461	$49,609	$1,240,231	$ 41,341
Gantry Cranes	60 years	2028-2030	$7,441,384	$148,828	$7,441,384	$248,046
Water and Wastewater Systems	20 years	2028; 2048	$5,581,038	$111,621	$2,790,519	$ 93,017
Roadway and Transportation Infrastructure	50 years	2018	$6,201,154	$124,023	$6,201,154	$206,705
Cost Contingency	10%		$7,742,140	$154,843	$6,200,158	$206,672
TOTAL			**$781,956,181**	**$15,639,124**	**$626,215,934**	**$20,873,864**

[1]This cost occurs in 2048 and is not applicable to a 30-year term.

Douglas PUD's Proposed PM&E Costs include costs associated with implementation of the Wells HCP, Aquatic Settlement Agreement, and the Wildlife and Botanical, Avian Protection, Recreation and Historic Properties management plans. The average annual cost associated with implementing the Wells HCP, as approved in 2004 (existing Wells HCP measures), is included in the Historic Power Costs provided in Table 3.0-1. For the fiscal years ended 2003 to 2007, the average annual cost of implementing the existing Wells HCP measures was $9.6 million.

Future costs of implementing the existing Wells HCP measures during the term of the new license can be found in Table 4.0-2. These costs include the repair and refurbishment of major components of the fish ladder and JBS, future adult fish passage and juvenile fish run-timing studies, and the future implementation of fish passage and survival studies. Over a new license term of 50 years, continuation of the existing Wells HCP measures is estimated to cost $477.5 million. Over a new license term of 30 years, continuation of existing Wells HCP measures is estimated to cost $287.5 million.

Since 2004, there have been new developments related to the Wells HCP that will require implementation of additional measures during the term of the new license. Hatchery and Genetic Management plans (HGMP) for Endangered Species Act-listed Upper Columbia River spring Chinook and Upper Columbia River steelhead are currently under development and are expected to require extensive modifications to the Wells and Methow hatcheries. The anticipated future construction of the Chief Joseph Hatchery will require additional mitigation for spring and summer/fall Chinook. The estimated capital and annual costs of the new Wells HCP measures are contained in Table 4.0-3. Over a new license term of 50 years, implementation of the new Wells HCP measures is estimated to cost an additional $72.5 million. Over a new license term of 30 years, implementation of the new Wells HCP measures estimated to cost $46.2 million.

The total 50-year cost of existing and new Wells HCP measures is estimated to be $550 million with an average annual cost of existing and new Wells HCP measures estimated to be $11 million ($9.55 million future cost of existing Wells HCP measures plus $1.45 million future cost of new Wells HCP measures). The total 30-year average cost of existing and new Wells HCP measures is estimated to be $333.6 million.

In addition to the Wells HCP costs listed in Tables 4.0-2 and 4.0-3, Douglas PUD estimates that the costs of the proposed PM&E measures associated with implementation of the Aquatic Settlement Agreement and the proposed Wildlife and Botanical, Avian Protection, Recreation, and Historic Properties management plans will be $93.6 million over a 50-year license term, or $58.4 million over a 30-year license term (Tables 4.0-4 to 4.0-13). This estimate does not include the cost of implementing the Off-License Settlement Agreement or Douglas PUD's Land Use Policy. The estimated cost to implement Douglas PUD's Land Use Policy is already captured within the Project Operating Costs.

Table 4.0-2 Costs for continuation of existing Wells HCP measures (in 2012 dollars).[1]

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
ANNUAL CAPITAL COSTS						
1. Annual Debt Service Fish Facilities	Annual	50 times	$198,139,264	$3,962,785	$118,883,558	$3,962,785
PERIODIC CAPITAL COSTS						
2. Replacement of the Wells Fish Hatchery Intake Screen	2042	1 time	$1,860,346	$37,207	N/A[2]	N/A[2]
3. Refurbishment of the Adult Fish Ladders	2027	1 time	$6,263,165	$125,263	$6,263,165	$208,772
4. Repair and Rehabilitate the JBS	2024; 2059	2 times	$3,827,352	$76,547	$1,913,676	$63,789
5. Repair and Rehabilitate the adult PIT-tag system	2014; 2024; 2034; 2044; 2054	5 times	$3,100,577	$62,012	$1,860,346	$62,012
Capital Cost Subtotal			***$213,190,704***	***$4,263,814***	***$128,920,745***	***$4,297,358***
ANNUAL O&M COSTS						
6. Operation of Wells Fish Facilities	Annual	50 times	$14,969,585	$299,392	$8,981,751	$299,392
7. Supervision of Fish Facilities	Annual	50 times	$28,029,215	$560,584	$16,817,529	$560,584
8. Maintenance of Fish Facilities (adult ladder and juvenile bypass)	Annual	50 times	$3,361,025	$67,221	$2,016,615	$67,221
9. Hatchery Operations[3]	Annual	50 times	$40,295,097	$805,902	$24,177,058	$805,902
10. Maintenance of Hatcheries[3]	Annual	50 times	$32,568,459	$651,369	$19,541,076	$651,369
11. Wells HCP Fish Study Costs	Annual	50 times	$76,162,570	$1,523,251	$45,697,542	$1,523,251
12. Methow Coho Program	Annual	50 times	$4,340,808	$86,816	$2,604,485	$86,816
13. Tributary Enhancement Fund	Annual	50 times	$13,897,096	$277,942	$8,338,257	$277,942
Annual O&M Costs Subtotal[4]	***Annual***	***50 times***	***$213,623,855***	***$4,272,477***	***$128,174,313***	***$4,272,477***
PERIODIC O&M COSTS						
14. Adult Fish Passage and Juvenile Fish Run-timing Studies[5]	2013, 2023, 2033, 2043, 2053	5 times	$11,162,077	$223,242	$6,697,246	$223,242
15. Passage and Survival Studies[6]	2013, 2023, 2033, 2043, 2053	5 times	$39,563,361	$791,267	$23,738,016	$791,267
Periodic O&M Cost Subtotal			***$50,725,438***	***$1,014,509***	***$30,435,262***	***$1,014,509***
TOTALS			**$477,539,997**	**$9,550,800**	**$287,530,320**	**$9,584,344**

1 The Wells HCP was negotiated to meet the anadromous salmon and steelhead requirements for the relicensing of the Wells Project (See Section 9.5 of the Wells HCP).

2 These costs do not occur within a 30-year license term.

3 Costs for implementation of the Wells HCP only.

4 These costs are the average of Wells HCP costs from 2003-2007 and reflect actual costs such as the operation and maintenance of the fish ladders, bypass system, hatcheries, monitoring and evaluation of the hatchery programs, Wells HCP committee costs and funding of the tributary plan species account.

5 The Wells HCP requires these studies to take place every 10 years, starting in 2004, throughout the term of the agreement in order to ensure continued compliance with established passage and run-timing criteria (studies in years 2013, 2023, 2033, 2043, and 2053).

6 The Wells HCP requires passage and survival studies every 10 years, starting in 2004, throughout the term of the agreement in order to ensure continued compliance with established survival levels and phase designations (studies in years 2013, 2023, 2033, 2043, and 2053).

Table 4.0-3 Costs of new Wells HCP measures (in 2012 dollars).[1]

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
16. Implement UCR spring Chinook HGMP[2]	2026	1 time	$19,138,001	$382,760	$19,138,001	$637,933
17. Implement UCR steelhead HGMP2	2015; 2050	2 times	$49,609,230	$992,185	$24,804,615	$826,821
Capital Costs Subtotal			***$68,747,231***	***$1,374,945***	***$43,942,616***	***$1,464,754***
O&M COSTS						
18. Chief Joseph Hatchery Chinook Program[3]	Annual	50 times	$3,720,692	$74,414	$2,232,415	$74,414
O&M Costs Subtotal			***$3,720,692***	***$74,414***	***$2,232,415***	***$74,414***
TOTALS			**$72,467,923**	**$ 1,449,359**	**$46,175,031**	**$1,539,168**

1 The Wells HCP was negotiated to meet the anadromous salmon and steelhead requirements for the relicensing of the Wells Project (See Section 9.5 of the HCP).

2 Costs for implementation of the Wells HCP only.

3 The Wells HCP requires compensation for the reintroduction efforts focused on Okanogan spring Chinook and supplementation efforts focused on Okanogan River summer/fall Chinook. Funding for these two programs will take effect during the term of the new license.

Table 4.0-4 Costs of proposed White Sturgeon Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A***[1]	***N/A***[1]	***N/A***[1]	***N/A***[1]
O&M COSTS						
19. Brood Stock Collection and Breeding Plan	Annual	50 times	$155,029	$3,101	$93,017	$3,101
20. Brood Stock Collection	2012-2018, 2021-2062	48 times	$2,914,542	$58,291	$1,700,150	$56,672
21. Phase I Juvenile White Sturgeon Stocking (Hatchery Operations and Planting)	2014-2023	10 times	$2,480,461	$49,609	$2,480,461	$82,682
22. Phase I Juvenile White Sturgeon Stocking (passive/active tagging and external marking)	2013-2023	11 times	$496,092	$9,922	$ 496,092	$16,536
23. Phase I Index Monitoring and Evaluation Program	2015-2017, 2 more yrs. before 2023	5 times	$1,550,288	$31,006	$1,550,288	$51,676
24. Phase I Marked Fish Tracking Program	2015-2017, 2 more yrs. before 2023	5 times	$930,173	$18,603	$ 930,173	$31,006
25. Determining Natural Reproduction Potential	5 times over the 50-year license term	5 times	$620,115	$12,402	$ 372,069	$12,402
26. Phase II Long-Term Juvenile White Sturgeon Stocking	2024-2062	38 times	$9,425,754	$188,515	$4,464,831	$148,828
27. Phase II Supplementation Program Review	Annual	50 times	$2,480,461	$49,609	$1,488,277	$49,609
28. Phase II Long-Term Index Monitoring Program	2024, and then every 3-5 yrs.	8-12 times	$1,637,105	$32,742	$ 818,552	$27,285
29. Evaluation and Implementation of Adult Passage Measures	2023, 2033, 2043, 2053	4 times	$248,046	$4,961	$ 124,023	$4,134
30. Educational Opportunities Coinciding with Sturgeon Activities	Annual	50 times	$124,023	$2,480	$74,414	$2,480
31. Annual Report (See Settlement Cost Table)	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
O&M Costs Subtotal			***$23,062,089***	***$ 461,241***	***$14,592,347***	***$486,411***
TOTALS			**$23,062,089**	**$ 461,241**	**$14,592,347**	**$486,411**

[1]There are no capital costs associated with implementing the White Sturgeon Management Plan.
[2]The cost of the Annual Report for all Aquatic Settlement Management Plans implementation activities is captured in Table 4.0-10, Proposed Aquatic Settlement Work Group costs.

Table 4.0-5 Cost of proposed Bull Trout Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
32. Modify Fishways and Bypass if Adverse Impacts are Identified	Unknown	N/A	N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A***	***N/A***	***N/A***	***N/A***
O&M COSTS						
33. Adult and sub-adult Ladder Passage	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
34. Bull Trout Upstream Fishway Counts	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
35. Bull Trout Fishway Operating Criteria	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
36. Bull Trout Bypass Operations	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
37. Adult Bull Trout Passage Evaluation	2017, 2022, 2032, 2042, 2052, 2062	6 times	$775,144	$15,503	$387,572	$12,919
38. Adult Bull Trout Passage and Evaluation at (Off-Project) Collection Facilities	2013, 2014, 2022, 2032, 2042, 2052, 2062	7 times	$558,104	$11,162	$ 318,916	$10,631
39. Sub-Adult Bull Trout Monitoring	Annual	50 times	$310,058	$6,201	$ 186,035	$6,201
40. Conduct Entrapment and Stranding Surveys	2012-2016, 2021, 2026, 2031, 2036, 2041, 2046, 2051, 2056, 2061	14 times	$173,632	$3,473	$ 124,023	$4,134
41. Documenting Incidental Captures due to Predator Control and Other MP Activities	Annual	50 times	$310,058	$6,201	$ 186,035	$6,201
42. Fund Collection of Tissue Samples and Genetic Analysis	2012, 2013, 2014, 2022, 2032, 2042, 2052, 2062	8 times	$55,810	$1,116	$34,881	$1,163
43. Information Exchange and Regional Monitoring Efforts	Annual	50 times	$142,627	$2,853	$85,576	$2,853
44. Bull Trout Monitoring During Hatchery Activities	Annual	50 times	$124,023	$2,480	$74,414	$2,480
45. Twisp Weir Monitoring for Bull Trout Delay	2017	1 time	$124,023	$2,480	$ 124,023	$4,134
46. Monitor and Mitigate Effects of Hatchery Program on Bull Trout	2013, 2023, 2033, 2043, 2053	5 times	$620,115	$12,402	$ 372,069	$12,402
47. Annual Report (See Settlement Cost Table)	Annual	50 times	N/A[3]	N/A[3]	N/A[3]	N/A[3]
O&M Costs Subtotal			***$3,193,594***	***$63,871***	***$1,893,544***	***$63,118***
TOTALS			**$3,193,594**	**$63,871**	**$1,893,544**	**$63,118**

[1]There are no capital costs associated with implementing the Bull Trout Management Plan.
[2]These costs are captured in the Wells HCP bypass operations which are included in existing Wells HCP costs.
[3]The cost of the Annual Report for all Aquatic Settlement Management Plans implementation activities is captured in Table 4.0-10, Proposed Aquatic Settlement Work Group costs.

Table 4.0-6 Cost of proposed Pacific Lamprey Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
48. Fishway Modifications to Improve Upstream Passage, Including Fishway Inspections, Entrance Efficiency Plans, Transition Zone Plans, and Diffuser Grating Modifications	2013, 2022	2 times	$1,240,231	$24,805	$1,240,231	$41,341
Capital Costs Subtotal			***$1,240,231***	***$24,805***	***$1,240,231***	***$41,341***
O&M COSTS						
49. Upstream Fishway Operating Criteria	Annual	50 times	$310,058	$6,201	$ 186,035	$6,201
50. Salvage Activities During Ladder Dewatering and Maintenance	Annual	50 times	$124,023	$2,480	$74,414	$2,480
51. Upstream Fishway Counts	Annual	50 times	$620,115	$12,402	$372,069	$12,402
52. Upstream Passage Improvement Literature Review	2012, 2021, 2031, 2041, 2051, 2061	6 times	$37,207	$744	$24,805	$827
53. Adult Pacific Lamprey Upstream Passage Evaluation (Following Implementation of Modifications)	2014, 2023	2 times	$372,069	$7,441	$ 372,069	$12,402
54. Periodic Monitoring (After Passage Standard Met)	2024, 2034, 2044, 2054	4 times	$744,138	$14,883	$ 372,069	$12,402
55. Downstream Bypass Operating Criteria	Annual	50 times	N/A[1]	N/A[1]	N/A[1]	N/A[1]
56. Juvenile Passage Survival Literature Review	2017, 2022, 2027, 2032, 2037, 2042, 2047, 2052, 2057, 2062	10 times	$62,012	$1,240	$31,006	$1,034
57. Juvenile Downstream Passage and Survival Evaluation	2017, 2027, 2037, 2047, 2057	5 times	$6,201,154	$ 124,023	$3,720,692	$124,023
58. Juvenile Lamprey Habitat Evaluation	2015	1 time	$186,035	$3,721	$ 186,035	$6,201
59. Regional Workgroup Participation	Annual	50 times	$310,058	$6,201	$ 186,035	$6,201
60. Annual Report (See Settlement Cost Table)	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
O&M Costs Subtotal			***$8,966,869***	***$179,336***	***$5,525,229***	***$184,173***
TOTALS			**$10,207,100**	**$ 204,141**	**$6,765,460**	**$225,514**

[1]These costs are captured in the Wells HCP bypass operations and are included in the existing Wells HCP costs.

[2]The cost of the Annual Report for all Aquatic Settlement Management Plans implementation activities is captured in Table 4.0-10, Proposed Aquatic Settlement Work Group costs.

Table 4.0-7 Cost of proposed Resident Fish Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A[1]***	***N/A[1]***	***N/A[1]***	***N/A[1]***
O&M COSTS						
61. Predator Control	Annual	50 times	NA[2]	NA[2]	NA[2]	NA[2]
62. Shoreline Protection	Annual	50 times	NA[2]	NA[2]	NA[2]	NA[2]
63. Monitor Resident Fish Assemblage within the Wells Reservoir	2014, 2024, 2034, 2044, 2054	5 times	$2,170,404	$43,408	$1,302,242	$43,408
64. Actions to Address Major Shifts in Native Resident Fish Assemblage	TBD	2 times	$620,115	$12,402	$310,058	$10,335
65. Monitoring in Response to Proposed Changes in Project Operations	NA	0 times	N/A[3]	N/A[3]	N/A[3]	N/A[3]
66. Annual Report (See Settlement Cost Table)	Annual	50 times	N/A[4]	N/A[4]	N/A[4]	N/A[4]
O&M Costs Subtotal			***$2,790,519***	***$55,810***	***$1,612,300***	***$53,743***
TOTALS			**$2,790,519**	**$55,810**	**$1,612,300**	**$53,743**

[1]There are no capital costs associated with implementing the Resident Fish Management Plan.
[2]This cost is already covered under existing Wells HCP costs.
[3]Douglas PUD does not anticipate changes in Project Operations.
[4]The cost of the Annual Report for all Aquatic Settlement Management Plans implementation activities is captured in Table 4.0-10, Proposed Aquatic Settlement Work Group costs.

Table 4.0-8 Cost of proposed Aquatic Nuisance Species Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A[1]***	***N/A[1]***	***N/A[1]***	***N/A[1]***
O&M COSTS						
67. Implement Best Management Practices during Recreation Improvement Activities	TBD	8 times	$148,828	$2,977	$93,017	$3,101
68. Coordination with Regional and State Entities	Annual	50 times	$310,058	$6,201	$ 186,035	$6,201
69. Monitor Bycatch from Other Activities for ANS	Annual	50 times	$620,115	$12,402	$ 372,069	$12,402
70. ANS Information and Education	Annual	50 times	$930,173	$18,603	$ 558,104	$18,603
71. Monitor and Address ANS Effects to Aquatic Communities during Changes in Project Operations	N/A[2]	0 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
72. Annual Report (See Settlement Cost Table)	Annual	50 times	N/A[3]	N/A[3]	N/A[3]	N/A[3]
O&M Costs Subtotal			***$2,009,174***	***$40,183***	***$1,209,225***	***$40,307***
TOTALS			**$2,009,174**	**$40,183**	**$1,209,225**	**$40,307**

[1]There are no capital costs associated with implementing the Aquatic Nuisance Species Management Plan.
[2] Douglas PUD does not anticipate changes in Project Operations.
[3]The cost of the Annual Report for all Aquatic Settlement Management Plans implementation activities is captured in Table 4.0-10, Proposed Aquatic Settlement Work Group costs.

Table 4.0-9 Cost of proposed Water Quality Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A[1]***	***N/A[1]***	***N/A[1]***	***N/A[1]***
O&M COSTS						
73. TDG Monitoring	Annual	50 times	$3,410,635	$68,213	$2,046,381	$68,213
74. Spill Operations Plan	2012-2022, 2032, 2042, 2052, 2062	15 times	$173,632	$3,473	$ 138,906	$4,630
75. Gas Abatement Plan and TDG Exception	Annual	50 times	$620,115	$12,402	$ 372,069	$12,402
76. Temperature Monitoring	Annual	50 times	$806,150	$16,123	$ 483,690	$16,123
77. Participation in Temperature TMDL Development and Implementation	TBD/ 5 times	5 times	$310,058	$6,201	$ 186,035	$6,201
78. Spill Prevention and Control Requirements	Every 3 Years	16 times	$496,092	$9,922	$ 310,058	$10,335
79. Participation in Columbia and Snake River Spill Response Initiative	Annual	50 times	$620,115	$12,402	$372,069	$12,402
80. Inspections	Annual	50 times	$310,058	$6,201	$186,035	$6,201
81. Annual Report (See Settlement Cost Table)	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
82. Study Plans (Quality Assurance Plans)	Annual	50 times	$1,860,346	$37,207	$1,116,208	$37,207
O&M Costs Subtotal			***$8,607,201***	***$172,144***	***$5,211,451***	***$173,714***
TOTALS			**$8,607,201**	**$172,144**	**$5,211,451**	**$173,714**

[1]There are no capital costs associated with implementing the Water Quality Management Plan.
[2]The cost of the Annual Report for all Aquatic Settlement Management Plans implementation activities is captured in Table 4.0-10, Proposed Aquatic Settlement Work Group costs.

Table 4.0-10 Cost of proposed Aquatic Settlement Work Group (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A[1]***	***N/A[1]***	***N/A[1]***	***N/A[1]***
O&M COSTS						
83. Meeting Facilitation and Minutes	Annual	50 times	$2,232,415	$44,648	$1,339,449	$44,648
84. Annual Report	Annual	50 times	$3,100,577	$62,012	$1,860,346	$62,012
O&M Costs Subtotal			***$5,332,992***	***$106,660***	***$3,199,795***	***$106,660***
TOTALS			**$5,332,992**	**$106,660**	**$3,199,795**	**$106,660**

[1]There are no capital costs associated with the proposed Aquatic Settlement Work Group.

Table 4.0-11 Cost of proposed Wildlife and Botanical and Avian Protection plans (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
85. Repair the Cassimer Bar Wildlife Management Area Dikes (includes design and permitting).	Year 3	1 time	$37,207	$744	$37,207	$1,240
Capital Costs Subtotal			***$37,207***	***$744***	***$37,207***	***$1,240***
O&M COSTS						
86. Install Signs at Access Sites Regarding American White Pelican Avoidance.	Year 2	1 time	$6,201	$124	$6,201	$207
87. Provide Irrigation for Irrigation Dependent Riparian Vegetation at Bridgeport Bar Wildlife Unit.	Annual	50 times	$608,705	$12,174	$365,223	$12,174
88. Survey and Revise Site Boundaries for RTE Plants.	Every 10 years	5 times	$69,453	$1,389	$41,672	$1,389
89. Allow No Ground Disturbing Activities or Land Use Permits within 500 feet of Known RTE Plants.	Annual	50 times	N/A[1]	N/A[1]	N/A[1]	N/A[1]
90. Follow Specific Protocols for Weed Control on Project Lands, in the 230kV Corridor, and Near RTE Plants.	Annual	50 times	N/A[1]	N/A[1]	N/A[1]	N/A[1]
91. Inventory Raptor Perch Poles and Replace as Needed.	Annual	50 times	$329,901	$6,598	$ 197,941	$6,598
92. Remove Raptor Perch Poles at Starr Boat Launch.	Year 1	1 time	$1,860	$37	$1,860	$62
93. Conduct Monthly Bald Eagle and Perch tree Inventories.	Annual (November - March)	50 times	$131,216	$2,624	$78,730	$2,624
94. Install Beaver Protection on Raptor Perch Trees.	Year 2	1 time	$62,012	$1,240	$62,012	$2,067
95. Inspect and Repair Beaver Protection on Raptor Perch Trees.	Annual	50 times	$155,029	$3,101	$93,017	$3,101
96. Ensure recruitment of Small Trees for Future Perch Trees.	Annual	50 times	$186,035	$3,721	$111,621	$3,721
97. Plant at Least 50 Acres of Grain Crops at Bridgeport Bar Wildlife Unit.	Annual	50 times	$566,165	$11,323	$339,699	$11,323
98. Conduct Twice Monthly Reservoir Monitoring of Project to Identify Unauthorized Habitat Damage.	Annual	50 times	$1,310,676	$26,214	$786,406	$26,214

[1]These costs are already captured in the continuation of Historic Project Costs.

Table 4.0-11 (Continued)

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
99. Repair or Replace Lost Habitat due to Unauthorized Damage.	Annual	50 times	$496,092	$9,922	$297,655	$9,922
100. Manage Cassimer Bar Wildlife Management Area for wildlife.	Annual	50 times	$310,058	$6,201	$186,035	$6,201
101. Inspect Cassimer Bar Dikes and Repair as Needed.	Annual	50 times	$93,017	$1,860	$55,810	$1,860
102. Control Class A and B Designate Weeds.	Annual	50 times	$1,860,346	$37,207	$1,116,208	$37,207
103. Conduct Weed Surveys.	Every 5 years	10 times	$620,115	$12,402	$372,069	$12,402
104. Consult with Agencies as Needed.	Annual	50 times	$62,012	$1,240	$37,207	$1,240
105. Install Bird Flight Diverters in the Event that the River Crossing is Reconductored.	Annual	50 times	$31,006	$620	$18,603	$620
106. Avian Protection Plan	Annual	50 times	$186,035	$3,721	$111,621	$3,721
O&M Costs Subtotal			***$7,085,934***	***$141,718***	***$4,279,590***	***$142,653***
TOTALS			**$7,123,141**	**$ 142,462**	**$4,316,797**	**$143,893**

Table 4.0-12 Cost of proposed Historic Property Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			N/A[1]	N/A[1]	N/A[1]	N/A[1]
O&M COSTS						
107. HPMP Administration	Annual	50 times	$1,860,346	$37,207	$1,116,208	$37,207
108. Employee Education Program	Annual	50 times	$186,035	$3,721	$111,621	$3,721
109. Public Education Program	Annual	50 times	$62,012	$1,240	$37,207	$1,240
110. Monthly Reservoir Inspections	Annual	50 times	N/A[2]	N/A[2]	N/A[2]	N/A[2]
111. Evaluate Wells Dam for Historic and Architectural Significance	2017	1 time	$24,805	$496	$24,805	$827
112. Document and Data Indexing/Archiving	2016	1 time	$24,805	$496	$24,805	$827
113. HPMP Implementation Report	Annual	50 times	$620,115	$12,402	$372,069	$12,402
114. Annual Archaeological Monitoring at 44 Sites	2012, 2013, 2014, 2015, 2016	5 times	$279,052	$5,581	$279,052	$9,302
115. Erosion Monitoring at Selected Archaeological Sites	2012,2013, 2014, 2105, 2016	5 times	$186,035	$3,721	$186,035	$6,201
116. Periodic Monitoring after 2016 and Inundated Sites Monitoring	Calculated as an annual cost, though monitoring may only occur every three years.	50 times	$1,860,346	$37,207	$1,116,208	$37,207
117. Ten Year Archaeological Monitoring	2022, 2032, 2042, 2052, 2062	5 times	$496,092	$9,922	$198,437	$6,615
118. Site Testing at Eight Sites, and Periodic Site Testing Following Monitoring Efforts.	Calculated as an annual cost, though testing may not occur every year.	50 times	$620,115	$12,402	$372,069	$12,402
119. Curation	Annual	50 times	$1,860,346	$37,207	$1,116,208	$37,207
120. Site Protection at Selected Archaeological Sites	Calculated as an annual cost, though site protection may not occur every year.	50 times	$620,115	$12,402	$372,069	$12,402
O&M Costs Subtotal			***$8,700,219***	***$174,004***	***$5,326,793***	***$177,560***
TOTALS			**$8,700,219**	**$174,004**	**$5,326,793**	**$177,560**

[1]There are no capital costs associated with the Historic Properties Management Plan.
[2]This cost is captured in the reservoir monitoring cost in the Terrestrial Management plans.

Table 4.0-13 Cost of proposed Recreation Management Plan (in 2012 dollars).

PM&E Measure	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
121. Wells Dam Overlook Interpretive Displays	Year 3	1 time	$793,748	$15,875	$793,748	$26,458
122. Marina Park Expansion	Year 5	1 time	$706,932	$14,139	$706,932	$23,564
123. Boat-in Tent Camping (formal)	Year 5	1 time	$62,012	$1,240	$62,012	$2,067
124. Boat-in Tent Camping (rustic) and Signage	Year 2	1 time	$18603	$372	$18603	$620
125. Extend Chicken Creek Boat Launch	Year 3	1 time	$18,603	$372	$18,603	$620
126. Reservoir Navigation Maps	Year 2	1 time	$24,805	$496	$24,805	$827
Capital Costs Subtotal			***$1,624,703***	***$32,494***	***$1,624,703***	***$54,156***
O&M COSTS						
127. Recreation Facilities Operation and Maintenance	Annual	50 times	$14,828,473	$296,569	$8,897,084	$296,569
128. Wildlife Viewing Trail Development	Year 2	1 time	$55,810	$1,116	$55,810	$1,860
129. Promotion of Recreation Facilities	Year 2	1 time	$31,006	$620	$31,006	$1,034
130. FERC Form 80 recreation user counts	Every 6 years	8 times	$99,218	$1,984	$62,012	$2,067
131. Recreation Management Plan Update	Every 6 years	8 times	$4,960,923	$99,218	$3,100,577	$103,353
132. Recreation Use & Need Study	Every 20 years	2 times	$372,069	$7,441	$186,035	$6,201
133. Recreation Management Plan Administration	Annual	50 times	$620,115	$12,402	$372,069	$12,402
O&M Costs Subtotal			***$20,966,099***	***$419,319***	***$12,681,360***	***$422,711***
TOTALS			**$22,590,802**	**$ 451,813**	**$14,306,063**	**$476,867**

Table 4.0-14 Cost of Off-License Fish and Wildlife Settlement (in 2012 dollars).

Item	License Year(s)	Number of Events	50-Year		30-Year	
			Total	Annualized	Total	Annualized
CAPITAL COSTS						
None			N/A[1]	N/A[1]	N/A[1]	N/A[1]
Capital Costs Subtotal			***N/A[1]***	***N/A[1]***	***N/A[1]***	***N/A[1]***
O&M COSTS						
Resident Trout Program (O&M, M&E and Capital)	Annual	50 times	$3,968,738	$79,375	$2,381,243	$79,375
Wildlife Area Funding ($200,000 per year)	Annual	50 times	$12,402,307	$ 248,046	$7,441,384	$248,046
Habitat Restoration Funding ($50,000 cap)	2037	1 time	$62,012	$1,240	$62,012	$2,067
Capital Equipment	Annual	50 times	$3,596,669	$71,933	$2,158,001	$71,933
O&M Costs Subtotal			***$20,029,726***	***$400,594***	***$12,042,640***	***$401,421***
TOTALS			**$20,029,726**	**$400,594**	**$12,042,640**	**$401,421**

The AIC is the sum of the Projected Operating Costs, Future R&R Costs, and Proposed PM&E Costs (Table 4.0-15). The AIC of the Project as proposed to be operated under a new license is $58.9 million per year based on a 50-year license term or $16.93 /MWh, using the 2003-2007 average annual generation for sale of 3,479,200 MWh (Table 3.0-2). The corresponding cost based on a 30-year license term is $64.3 million per year or $18.49/MWh. These costs do not include the cost of the Off-License Settlement Agreement (Table 4.0-14).

Table 4.0-15 Estimated AIC of owning and operating the Wells Project as proposed in the final license application (in 2012 dollars).

Item	50 Year		30 Year	
	Total	Average	Total	Average
Projected Operating Costs	$1,520,000,000	$30,400,000	$912,000,000	$30,400,000
Future Repair and Replacement Costs	$781,956,181	$15,639,124	$626,215,934	$20,873,864
Proposed PM&E Costs	$643,624,751	$12,872,495	$392,139,126	$13,071,304
Total	$2,945,580,932	$58,911,619	$1,930,355,060	$64,345,169

5.0 AVERAGE ANNUAL VALUE OF PROJECT POWER

The average annual value of the power generated at the Wells Project was established by estimating the cost of generating the equivalent amount of energy using the lowest cost alternative source of power reasonably available over the long term, consistent with likely future environmental preferences.

The average net generation for the period 2003 to 2007 was 4,077,400 MWh. The nameplate capacity of the Wells Project is 774,300 kilowatts (kW), yielding a capacity factor of 60 percent using the long-term energy output. Net generation is the gross generation at the Wells Project reduced by station service and transmission losses. Douglas PUD places a high value on providing reliable, clean power to its customer-owners at a predictable price. The lowest cost alternative source of energy on any given day may be a one-day block of off-peak power purchased on the open market. However, this energy may or may not be available the following day, week, or year and does not provide Douglas PUD with a high level of financial certainty. Long-term power sales agreements provide a greater level of certainty but generally command a higher price in the marketplace. However, long-term, fixed-price agreements for a term greater than five years are not generally available in the current market.

While no other energy resource can be truly equivalent to the hydropower generation provided by the Wells Project, when one considers reliability, flexibility, and the ability to provide ancillary services, Douglas PUD evaluated various alternative sources of power and developed the following generation portfolio as the most likely low-cost alternative:

- new coal-fired Integrated Gasification Combined Cycle (IGCC) plant rated at 565 MW (plant factor of 0.75), combined with
- new 375 MW wind plant (plant factor of 0.2)

The integration of the wind plant with the IGCC plant would meet Washington State renewable energy standards. Douglas PUD prepared an analysis of the AIC for this combination of generation facilities (see Exhibit H) and found the annual cost of the IGCC to be roughly $70/MWh and the annual cost of the wind plant to be $130/MWh. Applying these costs, the annual value of generation at the Wells Project, based on the least cost alternative, was calculated to be $322 million, or $79/MWh, in 2008 dollars.

While Douglas PUD, as a public utility district, is considered a preference customer for energy from the Bonneville Power Administration (BPA), acquiring full-service energy supply from BPA was judged not to be a practical long-term alternative at this time. Demand on the BPA system is rising and overall supply has declined, especially when considering the availability of full service from BPA including reserves, load-following, and other ancillary services. In fact, new long-term contracts for full energy service are not currently available. Therefore, self-generation was the alternative believed to be most practicable as a comparison to the Wells Project generation.

6.0 SOURCES OF FINANCING AND REVENUE

Construction of the Wells Project was financed through the sale of $184,000,000 of revenue bonds. Douglas PUD issued bonds in 1963 for the purpose of financing the construction of the Wells Project, the initial design of which provided for seven turbine generating units. On February 2, 1965, the Federal Power Commission approved the inclusion in the Wells Project of three additional generating units. The additional units were financed with the proceeds of the sale of revenue bonds in 1965 ($18,600,000). The initially designed Wells Project was in commercial operation by September 16, 1967, and the additional three units were in commercial operation by January 24, 1969.

Subsequent to the initial construction bonding, there have been numerous revenue bonds issued to fund capital construction, settlements, and other large expenses of non-recurrent nature. At the end of 2007, the aggregate principal amount of Wells Project Bonds was $197,815,000. The Wells Project has been rated AA by S&P since 2002 and Aa2 by Moody's since 2003, recognizing the robust financial status of the Project.

Annual revenues are derived from the sale of Project power to buyers under long-term power sales contracts and from payments made by Douglas PUD's Electric Distribution System. These sales are made at the actual cost of Project power.

7.0 COSTS TO DEVELOP THE LICENSE APPLICATION

To date, Douglas PUD has spent $8.7 million on the relicensing of the Wells Project. This cost includes administrative and general salaries, office supplies and meeting expenses, and costs associated with the conduct of studies and development of settlements, management plans and license application.

8.0 ESTIMATED VALUE OF ON-PEAK AND OFF-PEAK POWER

The Wells Project operates in a run-of-river mode; therefore, paragraph (8) of 18 CFR § 4.51(e) is not applicable to this application.

9.0 CHANGES IN THE AMOUNT AND VALUE OF PROJECT POWER DUE TO PROPOSED CHANGES IN OPERATIONS

Douglas PUD is not proposing to change Project operations during the term of the new license; therefore, paragraph (9) of 18 CFR § 4.51(e) is not applicable to this application.

10.0 REFERENCES

Devine Tarbell & Associates, Inc. 2008. Wells Remaining Life Assessment and Major Equipment Costs. Prepared by Devine Tarbell & Associates, Inc. for Public Utility District No. 1 of Douglas County. June 2008.

Federal Energy Regulatory Commission. 2008. Northwest Electric Market: Overview and Focal Points. [Online] URL: http://www.ferc.gov/market-oversight/mkt-electric/ northwest/2008/01-2008-elec-nw-archive.pdf. (Accessed January 2008.)