March 14, 2014

In reply refer to: OPP/TPP-3

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Subject: BPA 2014 Annual Progress Report

In accordance with the WECC Progress Report Policies and Procedures, the attached document is Bonneville Power Administration’s 2014 Annual Progress Report. Feel free to contact me at 360-619-6819 if you have any questions or concerns.

Sincerely,

Berhanu Tesema
TSS Representative

Attachment

cc: Technical Studies Subcommittee
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1 Introduction

This Progress Report is prepared in satisfaction of the Western Electricity Coordinating Council’s (WECC) Progress Report Policies and Guidelines. This Progress Report (also called the Supplemental Progress Report) includes projects from the 2013 Progress Report where there has been no significant changes in Plans of service, capacity, or in-service. This report also identifies any projects completed since the 2013 Progress Report and any new Projects identified since the 2013 Progress Report.

This progress Report will include:

- All generation projects over 200 MW connected to the transmission system
- All new and upgraded transmission system facilities over 200 KV that may significantly alter the operation of the transmission system. Projects 200 KV and above that do not alter operation of the transmission system (e.g. bus tie breakers, bus sectionalizing breakers, shunt reactive additions, etc.) will not be included in this report.
- Any facilities below 200 KV that may have a significant impact on the reliability of the Western Interconnection.

Each Project reported will include:
1. A brief physical description of the Project,
2. The planned Project in-service date,
3. The Project status (the planning, design, or construction status), and
4. The Facility owner(s) name and a BPA point of contact.

2 Planned Transmission Projects

2.1 West of McNary Reinforcement Project Phase 2 (Big Eddy-Knight 500 KV Line)

2.1.1 Project Description

The purpose of West of McNary Reinforcement (WOMR) Project is to increase the transfer capability across the West of McNary (WOM), West of Slatt (WOS) and West of John Day (WOJ) paths that will enable BPA to provide transmission service for proposed renewable energy from the McNary area to Northwest load centers west of the Cascade Mountains, to the California-Oregon (COI) AC Intertie, and to the Pacific DC Intertie (PDCI). WOMR is one of multiple BPA projects being developed as a result BPA’s 2008 Network Open Season (NOS).

The WOMR Project was divided into two phases and phase 1 has been completed.

Phase 2 included:
1. A new 500 KV switching station called Knight Substation, located near Goldendale, Washington at tower 73/1 on the BPA Wautoma-Ostrander 500 kV line,
2. A new 28 mile, 500 kV transmission line connecting BPA’s Big Eddy Substation near The Dalles, Oregon to Knight Substation,
3. A Wautoma - Ostrander 500-kV line re-sag, and
4. A Wautoma 500 kV 300 MVAR shunt reactor which is in service on March 2014

2.1.2 Project Planned Operating Date
Phase 2 expected in service date is November 2015.

2.1.3 Project Status
The environmental review for this project was completed September 2011.

2.1.4 Project Owner and Point of Contact
BPA would own and operate all the facilities. The points of contact are:
Abebe Masho, TPP/OPP-340       Kyle Kohne, TPP/OPP-340
Bonneville Power Administration  Bonneville Power Administration
Vancouver, Washington            Vancouver, Washington
Phone: (360) 619-6834            Phone: (360) 619-6839
E-mail: atmasho@bpa.gov          E-mail: krikohne@bpa.gov

2.2 I-5 Corridor Reinforcement Project

2.2.1 Project Description
This purpose of this project is to increase the transfer capability of the I-5 Corridor in the vicinity of Southwest Washington and Northwest Oregon. This load service area includes the cities of Portland, Oregon and Vancouver, Washington, which include high concentrations of industrial, commercial, and residential load. The generating resources serving this area are a mix of hydro and thermal plants.

This proposed project includes a new 500 kV transmission line (approximately 70 miles) between Castle Rock, Washington and Troutdale, Oregon. This would require the construction of a new 500 KV switching station in the vicinity of Castle Rock Washington and the expansion of BPA's Troutdale Substation near Troutdale, Oregon.

The project is projected to increase capacity by approximately 1100 to 1400 MW on the South of Allston path.

2.2.2 Project Planned Operating Date
Upon completion of the environmental review, if BPA decides to build this project after the environmental review is completed, the projected energization date is 2018.

2.2.3 Project Status
This project is currently going through the environmental review process.
2.2.4 Project Owner and Point of Contact
BPA would own and operate all the facilities. The points of contact are:

- Tony Radcliff, TPP/OPP-340
- Kendall Rydell, TPP/OPP-340
- Bonneville Power Administration
- Bonneville Power Administration
- Vancouver, Washington
- Vancouver, Washington

Phone: (360) 619-6832 Phone: (360) 619-6825
E-mail: apradcliff@bpa.gov E-mail: karydell@bpa.gov

2.3 Central Ferry-Lower Monumental (Little Goose Area Reinforcement Project)

2.3.1 Project Description
The purpose of the Central Ferry-Lower Monumental Project is to increase the transfer capability West of Lower Monumental that will enable BPA to provide transmission service for proposed renewable energy from the Little Goose area to Northwest load centers and to the sending end of the California Interties (COI and PDCI). This project is one of several BPA projects being developed as a result BPA’s 2010 Network Open Season (NOS) process.

The Central Ferry-Lower Monumental project includes a new 38 mile 500 KV line. The project also includes a shunt 300 MVAR reactor at Central Ferry Substation and line re-terminations at Lower Monumental substation necessary to terminate the planned new 500 KV line.

2.3.2 Project Planned Operating Date
The projected energization date is December 2015.

2.3.3 Project Status
The environmental review for this project was completed March 2011.

2.3.4 Project Owner and Point of Contact
BPA would own and operate all the facilities. The points of contact are:

- Sylvia Wiggerhaus, TPP/OPP-3
- Chuck Matthews, TPP/OPP-340
- Bonneville Power Administration
- Bonneville Power Administration
- Vancouver, Washington
- Vancouver, Washington

Phone: (360) 619-6817 Phone: (360) 619-6833
E-mail: sjwiggerhaus@bpa.gov E-mail: cematthews@bpa.gov
2.4 Lower Valley Area Reinforcement Project

2.4.1 Project Description
A 345/161-kV transformer at PacifiCorp’s (PAC) Goshen Substation currently serves the Lower Valley area. Three transmission lines serve load out of Goshen. The Goshen-Drummond 161-kV line serves mostly Fall River loads and provides back-up service to Lower Valley. The Goshen-Swan Valley 161-kV line serves most of the Lower Valley load. The Goshen-Palisades 115-kV line serves the Palisades Generating Plant and some Lower Valley load.

BPA constructed a second Swan Valley-Teton line in 2000 and upgraded the Goshen-Drummond line to 161-kV in 2002. These upgrades increased the reliability of the Fall River system and helped support load growth in the Jackson Hole area, but did not increase the transmission capability to the southern part of Lower Valley’s system. Capacitor banks have been installed at Targhee, Tincup, Teton, and Madison.

PAC has constructed a new 345/138-kV Three Mile Knoll Substation a couple of miles north of their existing Caribou switching station. This new substation includes a new 345-kV interconnection with Idaho Power. Idaho Power’s Bridger-Goshen 345-kV line is looped into the new Three Mile Knoll 345/138-kV Substation which includes two new 345/138-kV, 650 MVA transformers. For the Lower Valley Area reinforcement Project, BPA will construct Hooper Springs 200 MVA 138/115-kV Substation adjacent to PAC’s Three Mile Knoll Substation.

2.4.2 Project Planned Operating Date
Planned energization is 2016.

2.4.3 Project Status
Lower Valley Energy has implemented an under voltage load shedding plan that will preserve system reliability for outage conditions through the 2016-2018 time frame. The project is in the design stage.

2.4.4 Project Owner and Point of Contact
BPA would own and operate all the facilities. The points of contact are:

Debby Hammack, TPP/OPP-340  
Bonneville Power Administration  
Vancouver, Washington  
Phone: (360) 619-6848  
E-mail: dlhammack@bpa.gov

Pat Rochelle, TPP/OPP-340  
Bonneville Power Administration  
Vancouver, Washington  
Phone: (360) 619-6826  
E-mail: prrochelle@bpa.gov
2.5 **Raver 500/230 kV Transformer Addition Project**

2.5.1 **Project Description**

This purpose of this project is to improve load service reliability to the Puget Sound area and Northern Intertie. The Puget Sound and Northern Intertie (PSANI) area transmission system is a winter peaking system that primarily consists of the interconnected systems of BPA, Puget Sound Energy (PSE), Seattle City Light (SCL), Snohomish PUD (SPUD), Tacoma Power Utilities (TPU), and British Columbia Transmission Company (BCTC), which serve Seattle, Tacoma, Olympia, and surrounding areas.

The Puget Sound Area is a highly congested network due to large concentrations of load and varying local generation patterns, which are further stressed by transfer levels between the US and Canada on the Northern Intertie. Winter peak loads are typically the worst, combined with lower local generation patterns and high exports to Canada. Through a joint Columbia Grid study effort, several system fixes have been agreed to by BPA, SCL, and PSE. They include several 115kV and 230kV PSE and SCL line upgrades, a BPA RAS upgrade and a new BPA 500/230kV transformer. The PSANI Reinforcements projects are scheduled to be completed in full by fall 2018. The Raver 500/230kV transformer addition is scheduled for completion in fall 2016.

The most limiting outage for the South Puget Sound area is a common corridor N-2 Tacoma-Raver #2 and Raver-Covington #1, which results in loss of two 500/230kV banks in the area. Other N-2 common corridor outages result in a loss of two 500/230kV banks either at Tacoma, Covington, or Maple Valley substations and cause severe loading on the remaining transformer banks. Once the Raver 500/230kV transformer addition is completed, the severity of these N-2 outages will be greatly reduced, mitigating overloads, and resulting in greater reliability to load service and operational flexibility for the Southern Puget Sound Area. The project also helps to reduce the risk of curtailment or redispatch events in the Puget Sound Area for certain outage conditions.

The plan of service is to install a 1300 MVA transformer at Raver substation. A new 230kV substation will be developed adjacent to the existing 500kV substation. The high side of the new transformer will terminate at Raver 500 KV. The Tacoma-Raver #1 and #2 500 KV lines are currently jumpered together and operated as double circuit 500kV for about 10 miles from Raver until it reaches Covington substation. The corridor for both circuits runs adjacent to Covington 230kV station and in the same corridor as the Raver-Covington #1 and #2 500 KV circuits. The project will reconfigure the Tacoma-Raver 500 KV lines by removing jumpers and re-terminating the Tacoma-Raver #2 circuit into Covington 230 KV and Raver 230 KV Substations. The Tacoma-Raver #2 line will be renamed and operated as the Raver-Covington #3 230 KV line. The plan of service also requires reconfiguring the Covington 230 KV bus, adding a new sectionalizing breaker and 2 bus tie breakers.

2.5.2 **Project Planned Operating Date**

The project is expected to be completed in 2016.

2.5.3 **Project Status**

This studies have been completed project funding has been approved.
2.5.4 Project Owner and Point of Contact
BPA would own and operate all the facilities. The points of contact are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Cathcart</td>
<td>(360) 619-6854</td>
<td><a href="mailto:dacathcart@bpa.gov">dacathcart@bpa.gov</a></td>
</tr>
<tr>
<td>Berhanu Tesema</td>
<td>(360) 619-6819</td>
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</tr>
<tr>
<td>Bonneville Power Admin</td>
<td></td>
<td></td>
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<tr>
<td>Vancouver, Washington</td>
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2.6 Schultz-Raver #3 & #4 500 Series Capacitors Project

2.6.1 Project Description
The purpose of this project is to increase transfer capability across the West of Cascades North Path and provide increased load service to the Puget Sound area.

This project adds 500 kV series capacitors at Schultz Substation on the Schultz-Raver 500 kV #3 and the Schultz-Raver 500 kV #4 lines.

2.6.2 Project Planned Operating Date
The project is planned for 2018/2019.

2.6.3 Project Status
The studies have been completed and the project is being submitted for funding.

2.6.4 Project Owner and Point of Contact
BPA would own and operate all the facilities. The points of contact are:

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<tr>
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<tr>
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<td><a href="mailto:dacathcart@bpa.gov">dacathcart@bpa.gov</a></td>
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<td>Berhanu Tesema</td>
<td>(360) 619-6819</td>
<td><a href="mailto:bktesema@bpa.gov">bktesema@bpa.gov</a></td>
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<tr>
<td>Vancouver, Washington</td>
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2.7 PDCI Uprate Project

2.7.1 Project Description
The Pacific DC Intertie (PDCI) provides a direct current (DC) intertie between The Dalles Oregon, and Los Angeles, CA. The current PDCI is rated at 3100 MW.

The PDCI Uprate project would increase the capacity by 700 MW from 3100 MW to 3800 MW. This project replaces the convertors at the Celilo HVDC terminal and re-conductors a small section of the DC transmission line. To reach the full 3800 MW will require the southern partner (LA Department of Water and Power) will need to reinforce the AC system on the southern end, upgrade some DC line sections, and make minor changes to their terminal equipment.
2.7.2 Project Planned Operating Date
2016 (Celilo DC upgrade only)

2.7.3 Project Status
The project is in the funding stage.

2.7.4 Project Owner and Point of Contact
BPA would own and operate only the facilities at Celilo Converter Station and the northern portion of the DC line. The points of contact are:

Eric Heredia, TPP/OPP-340
Bonneville Power Administration
Vancouver, Washington
Phone: (360) 619-6846
E-mail: emheredia@bpa.gov

Kyle Kohne, TPP/OPP-340
Bonneville Power Administration
Vancouver, Washington
Phone: (360) 619-6839
E-mail: krkohne@bpa.gov

2.8 Morrow Flats Project

2.8.1 Project Description
This is a new 230/115 kV substation approximately 3 miles east of BPA’s Boardman Substation connecting to the McNary-Boardman 230-kV and the McNary-Jones Canyon 230-kV lines. This substation is needed to provide load service in the Boardman-Umatilla area.

2.8.2 Project Planned Operating Date
2015.

2.8.3 Project Status
The project is in design.

2.8.4 Project Owner and Point of Contact
BPA would own and operate the 230-kV and 115-kV facilities at the planned substation. The points of contact are:

Matt Ingold, TPP/OPP-340
Bonneville Power Administration
Vancouver, Washington
Phone: (360) 619-6843
E-mail: mlingold@bpa.gov

Chuck Matthews, TPP/OPP-340
Bonneville Power Administration
Vancouver, Washington
Phone: (360) 619-6833
E-mail: cematthews@bpa.gov

2.9 Montana to Washington

2.9.1 Project Description
In 2010, Bonneville Power Administration (BPA) conducted a Network Open Season (NOS) to determine projects needed for requests for long-term firm transmission service. During the NOS process, entities requested the use of BPA's transmission system to transmit their power.
The studies found that there was not enough available transmission capacity to accommodate all requests for long-term service from BPA's Garrison Substation in Western Montana to load centers west of the Cascades and to market hubs serving the entire Northwest power market. Wind generation facilities built and proposed in the region have greatly increased the amount of planned generation in Montana seeking load and markets in the Northwest. As a result, BPA is proposing several reinforcements on BPA's transmission system at Garrison, Hot Springs, Bell, Dworshak, and Hatwai Substations.

Additionally, reconductoring is being proposed totaling 12 miles on the Dworshak-Taft No. 1 500-kilovolt (kV) line and a new series compensation substation is being proposed along the Garrison-Taft No. 1 and No. 2 500-kV lines, both of which would allow BPA to accommodate the requests for transmission service in this area. These reinforcements would increase the firm east-to-west transfer capability of the West of Garrison and West of Hatwai paths by primarily increasing the series compensation in existing 500-kV lines in the area.

2.9.2 Project Status
The environmental review of the project is currently under way and is scheduled to be completed in the fall of 2015.

2.9.3 Project Planned Operating Date
Planned energization of the project is 2018.

2.9.4 Project Owner and Point of Contact
BPA would own and operate the facilities. The points of contact are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Bonneville Power Administration</td>
<td>Vancouver, Washington</td>
<td></td>
</tr>
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3 Transmission Projects On Hold, Cancelled, or Completed in 2013

3.1 Echo Lake-Monroe 500 KV Transmission Project – ON HOLD

4 Planned Generation Interconnection Projects
No planned generation projects over 200 MW for 2014.

5 Generation Interconnection Projects Completed in 2012
None over 200 MW completed in 2013.
6 Waiver of “Significant Transmission Projects”
The project listed below is needed to serve and to increase local load reliability. It is not expected to have significant impacts on the operation of the Western Interconnect System. Thus, BPA requests waiver of “Significant Transmission Project” status for the purpose of the Project Coordination Review Process.

a. Raver 500/230 kV Transformer Addition Project

The plan of service is to install a 1300 MVA transformer at Raver substation. A new 230kV substation will be developed adjacent to the existing 500kV substation. The high side of the new transformer will terminate at Raver 500 KV. The project will also reconfigure the Tacoma-Raver 500 KV lines by removing jumpers and re-terminating the Tacoma-Raver #2 circuit into Covington 230 KV and Raver 230 KV Substations. The Tacoma-Raver #2 line will be renamed and operated as the Raver-Covington #3 230 KV line. The plan of service also requires reconfiguring the Covington 230 KV bus, adding a new sectionalizing breaker and 2 bus tie breakers.

This project is primarily for load service to Tacoma and Covington Substations and has no significant impact to the WECC transmission system. It has been studied as part of a sub-regional Puget Sound Area Study team through Columbia Grid. The projected energization is 2016.