FY 2016–2017

FINAL
AVERAGE SYSTEM COST REPORT

Public Utility District No. 1
of Clark County

July 2015

FY 2016–2017

FINAL
AVERAGE SYSTEM COST REPORT

FOR

Public Utility District No. 1
of Clark County

Docket Number: ASC-16-CL-01

PREPARED BY
BONNEVILLE POWER ADMINISTRATION
U.S. DEPARTMENT OF ENERGY

July 2015

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1 FILING DATA

Utility: **Public Utility District No. 1 of Clark County or Clark Public Utilities**
1200 Fort Vancouver Way
Vancouver, Washington 98663
http://www.clarkpublicutilities.com

Parties to the Filing:

Investor-Owned Utilities ("IOUs"):
Avista Corporation ("Avista")
Idaho Power Company ("Idaho Power")
PacifiCorp
Portland General Electric ("Portland General")
Puget Sound Energy ("Puget")

Consumer-Owned Utilities ("COUs"):
Public Utility District No. 1 of Snohomish County ("Snohomish")

Other Participants to the Filing:
Public Utility Commission of Oregon ("OPUC")

Average System Cost Base Period: Calendar Year ("CY") 2013

Effective Exchange Period: Fiscal Years 2016–2017, October 1, 2015 – September 30, 2017

Statement of Purpose:

Section 5(c) of the Pacific Northwest Electric Power Planning and Conservation Act ("Northwest Power Act" or "Act"), 16 U.S.C. § 839c(c), established the Residential Exchange Program ("REP"). Under the REP, any Pacific Northwest utility interested in participating in the REP may offer to sell power to Bonneville Power Administration ("BPA") at the average system cost of the utility's resources. In exchange, BPA offers to sell an "equivalent amount of electric power to such utility for resale to that utility's residential users within the region" at a rate established pursuant to Sections 7(b)(l) and 7(b)(3) of the Act. H.R. Rep. No. 976, Pt. I, 96th Cong., 2d Sess. 60 (1980). The cost benefits established by the REP are passed through directly to the exchanging utilities' residential and farm consumers. 16 U.S.C. § 839c(c)(3). A utility participating in the REP will hereinafter be referred to as a "Utility" or "Exchanging Utility."

The Northwest Power Act grants to BPA's Administrator the authority to determine Utilities' average system cost(s) ("ASC") based on a methodology established in a public consultation proceeding. 16 U.S.C. § 839c(c)(7). The Act specifically requires the Administrator to exclude from ASC three categories of costs:

> (A) the cost of additional resources in an amount sufficient to serve any new large single load of the Utility;
>
> (B) the cost of additional resources in an amount sufficient to meet any additional load outside the region occurring after the effective date of this Act; and
>
> (C) any costs of any generating facility which is terminated prior to initial commercial operation.

Id.

The Act limits eligibility for the REP to utilities and load located within the geographical area defined as the "Pacific Northwest" or "region." *See* 16 U.S.C. § 839a(14)(A)-(B). Specifically, "region" is defined as follows:

> the area consisting of the States of Oregon, Washington, and Idaho, the portion of the State of Montana west of the Continental Divide, and such portions of the States of Nevada, Utah, and Wyoming as are within the Columbia River drainage basin; and
>
> any contiguous areas, not in excess of seventy-five air miles from the area referred to in subparagraph (A), which are a part of the service area of a rural electric cooperative customer served by the Administrator on December 5, 1980, which has a distribution system from which it serves both within and without such region.

Id.

BPA conducted an ASC review to determine Clark's ASC for fiscal years ("FY") 2016−2017 based on BPA's 2008 ASC Methodology ("2008 ASCM"). *See* 18 C.F.R. Part 301, *Sales of Electric Power to the Bonneville Power Administration, Revisions to Average System Cost Methodology*, 74 Fed. Reg. 47,052 (2009).

This FY 2016–2017 Final Average System Cost Report ("Final ASC Report") describes BPA's ASC review process and evaluation used to implement the 2008 ASCM and the results of BPA's ASC Filing review.

For more information regarding the 2008 ASCM, please refer to the Federal Energy Regulatory Commission's final ruling and the *2008 ASCM*, available at Federal Energy Regulatory Commission's Final Ruling and the 2008 ASCM, and the *Average System Cost Methodology Final Record of Decision ("2008 ASCM ROD")*, June 30, 2008, available at BPA's Residential Exchange Program website.

General information regarding the ASC Review Process can be found at BPA's Residential Exchange Program website.

NOTE: If a filing Utility or an intervenor wished to preserve any issue related to an ASC Filing for subsequent administrative or judicial appeal, it must have raised such issue in its comments on the Draft ASC Report covering that ASC Filing. If a party failed to do so, the issue is waived for subsequent appeal. *See* Rules of Procedure for BPA's ASC Review Processes ("Rules of Procedure"), § 3.6.1.3.

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2 AVERAGE SYSTEM COST SUMMARY

2.1 Clark Public Utilities Background[1]

Clark Public Utilities ("Clark") is a public-owned utility providing electric service to 184,000 customers and water service to 30,000 customers in Clark County, Washington over an area of 628 square miles. Clark was incorporated in 1938 as a municipal corporation and is headquartered in Vancouver, Washington. The focus of this report is on Clark's electric generation and transmission system.

Clark's energy resource portfolio includes the 248-megawatt ("MW") (nameplate capacity) River Road natural gas-fired combined-cycle combustion turbine, a minor share in the Packwood Hydro Project (1.18 average megawatts ("aMW")), long-term power purchases from BPA, and short-term market purchases. Clark's electric system includes 55 substations/switching stations and 6,600 miles of transmission and distribution lines to deliver power.

In 2013, BPA supplied 55 percent of Clark's power supply, and the remainder was supplied by River Road and other small power purchases.

2.2 Base Period ASC

The 2008 ASCM requires Utilities participating in the ASC Review Process, both IOUs and COUs, to submit to BPA "Base Period" financial and operational information. The Base Period is defined as the calendar year of the most recent Federal Energy Regulatory Commission ("FERC") Form 1 data for IOUs, or the most recent audited financial statements (Annual Reports) for COUs. The Base Period data are derived from the Base Period FERC Form 1s (for IOUs) or the Annual Reports (for COUs), and underlying accounting system data for all Utilities. For purposes of the FY 2016−2017 filing period, the Base Period is CY 2013. The submitted information includes the "Appendix 1," an Excel-based workbook populated with financial and load data used to calculate the Base Period ASC.

Table 2.2-1 summarizes the CY 2013 Base Period ASC based on (1) the information contained in Clark's June 2, 2014, ASC Filing ("As-Filed"), and (2) as adjusted by BPA in this Final ASC Report. This Table does not reflect the Exchange Period (defined below) ASC, which is noted in subsequent tables.

[1] Information stated in this section was sourced from Clark's website and 2013 Annual Report.

Table 2.2-1: CY 2013 Base Period ASC
(Results of Appendix 1 calculations)

	June 2, 2014 As-Filed	July 23, 2015 Final ASC Report
Production Cost	$215,435,078	$215,435,078
Transmission Cost	$24,864,038	$24,864,038
(Less) NLSL Costs	$0	$0
(Less) Above-RHWM Costs	$0	$0
Contract System Cost ("CSC")	**$240,229,116**	**$240,299,116**
Total Retail Load (MWh)	4,441,162	4,441,162
(Less) NLSL	0	0
Total Retail Load (Net of NLSL)	4,441,162	4,441,162
Distribution Losses	168,352	168,352
(Less) Above-RHWM Load	0	0
Contract System Load ("CSL")	**4,609,514**	**4,609,514**
CY 2013 Base Period ASC (CSC/CSL)	**$52.13/MWh**	**$52.13/MWh**

2.3 FY 2016–2017 Distribution Loss Factor

The 2008 ASCM requires a Utility to include with its ASC Filing a current distribution loss analysis as described in Endnote e. *See* 18 C.F.R. § 301, End. e.

Losses are the distribution energy losses occurring between the transmission portion of the utility's system and the meters measuring firm energy load. *Id.* The distribution loss can be measured using one of the three methods outlined in Endnote e of the 2008 ASCM: (1) a loss study, (2) revenue grade meter readings, or (3) calculating a five-year average total system loss factor using data from the FERC Form 1 or a comparable data source. *Id.*

BPA reviewed and accepted Clark's supporting Distribution Loss Factor calculations. For purposes of this Final ASC Report, BPA used the Distribution Loss Factor of 3.79 percent included in Clark's As-Filed Appendix 1.

2.4 FY 2016–2017 Exchange Period ASC

BPA and intervenors had the opportunity to review, evaluate, and comment on a Utility's Appendix 1 historical costs and forecast loads submitted in the ASC Review Process. Once the Base Period ASC was determined, the cost data were escalated forward using the "ASC Forecast Model," an Excel-based macro model, to the midpoint of the Exchange Period, which in this instance is October 1, 2016. For purposes of the FY 2016–2017 ASC Review Period, the Exchange Period is October 1, 2015, to September 30, 2017 ("Exchange Period").

A Utility's As-Filed Exchange Period ASC may increase or decrease by the time of the Final ASC Report because of adjustments made during the ASC Review Process, such as updates to BPA's natural gas and market price forecasts, errata corrections, or other changes made by BPA. For all Utilities, BPA updated natural gas and market price forecasts to match natural gas and market price forecasts in the BP-16 Rate Case Final Proposal. See the "Input" tab of the ASC Forecast Model for the Utility's (1) As-Filed and (2) BPA-Adjusted models for additional details. All other adjustments, if any, made during the review are explained in Section 4 of this Final ASC Report.

For the COUs only, BPA updated Rate Period High Water Marks ("RHWMs") and the associated Tiered Rates to match what is being used in the BP-16 Final Proposal. See the "Tiered Rates" tab of the ASC Forecast Model for the Utility's (1) As-Filed and (2) BPA-Adjusted models for additional details.

Table 2.4-1 identifies the Exchange Period ASC the Utility filed on June 3, 2014, and as adjusted by BPA for this Final ASC Report. The ASC shown will be the Utility's ASC for the entire Exchange Period unless the Utility acquires (or loses) a major resource as defined by the 2008 ASCM and discussed in Section 2.5 of this Final ASC Report, or the Utility is subject to New Large Single Load ("NLSL") adjustments as discussed in Section 2.6.

Table 2.4-1: Exchange Period FY 2016–2017 ASC ($/MWh)
With No Major Resource Additions or Removals

Date	June 12, 2014[2] As-Filed	July 23, 2015 Final ASC Report
FY 2016–2017	54.42	50.95

2.5 ASC Major Resource Additions or Removals

Under the 2008 ASCM, a Utility's ASC may be adjusted to reflect the addition or loss of a major resource if such resource commences commercial operation (or ceases production) at any point between the end of the Base Period and the end of the Exchange Period. Such new or existing resource must be used to meet a Utility's retail load during the Exchange Period.

Before a Utility's ASC is adjusted to reflect the addition or loss of a major resource, the Utility must demonstrate that the proposed resource will meet the materiality requirements set forth in the 2008 ASCM. Section 301.4(c) of the 2008 ASCM provides that only a resource that affects a Utility's Base Period ASC by two and one-half percent (2.5%) or more will be considered a major resource. 18 C.F.R. § 301.4(c)(4). This is the materiality threshold. The 2008 ASCM also allows Utilities to submit stacks of individual resources that, when combined, meet the materiality threshold. *Id.* However, each individual resource in the stack must result in a change

[2] In mid-June, BPA provided an estimate of load data from the RHWM process which was still on-going at that time. Clark re-submitted its Appendix 1 with the "Tiered Rates" tab updated with the load data provided by BPA. This update has no impact on Clark's Base Year data. However, it does impact the Exchange Year data. As such, Clark submitted its Forecast Model on June 12, 2014, which was used for the As-Filed FY 2016-2017 ASC.

in Base Period ASC of one-half percent (0.5%) or more. *Id.* See also § 3.2.14 of this Final ASC Report.

For ASC calculation purposes, a major resource adjustment may be included in a Utility's ASC at the commencement of the Exchange Period if such resource becomes commercially operational (or ceases production) after the Base Period, but before the Exchange Period begins. In order for major resource additions to be included in a Utility's Exchange Period ASC at the beginning of the Exchange Period, a Major Resource Attestation must be received by BPA no later than the tenth (10th) business day after the Exchange Period begins.

Although the 2008 ASCM permits a Utility's ASC to be adjusted to reflect the inclusion of a major new resource that comes on-line during the Exchange Period, as part of the 2012 Residential Exchange Program Settlement Agreement, BPA Contract No. 11PB-12322 ("2012 REP Settlement"), all six regional IOUs agreed to waive this right: "Each IOU waives . . . the right to include in its ASC, . . . the cost of any major resource addition forecasted to occur during the Exchange Period as allowed by the ASC Methodology." 2012 REP Settlement, § 6.4. The exchanging COUs did not make such a waiver and will continue to include major new resource additions during the Exchange Period under the rules of the 2008 ASCM.

For informational purposes, BPA retained Table 2.5-2 in the Draft ASC Report, which identified all Exchanging Utilities' major resource additions *during* the Exchange Period because the 2012 REP Settlement was still subject to a challenge in the U.S. Court of Appeals for the Ninth Circuit (Court). However, on May 22, 2015, the Court issued a memorandum opinion in *Public Power Council v. U.S Dept. of Energy*, 2015 WL 2448336, which dismissed as moot the Western Public Agency Group's (WPAG) challenge to BPA's WP-07S ROD. This dismissal effectively ended all current challenges related to the REP. The dismissal will not change the manner in which BPA reviews or determines ASCs for the IOUs and COUs. However, it confirms that during the term of the 2012 REP Settlement, IOUs will not include major resource additions that come on line during the Exchange Period. Thus, BPA removed Table 2.5-2 from the IOUs' Final ASC Reports, and will not include it in the IOUs' future Draft and Final ASC Reports through the term of the Settlement Agreement.

Table 2.5-1 summarizes the major resource additions, prior to any NLSL adjustments, that are projected to become commercially operational, and major resources that will cease to be commercially operational, prior to the beginning of the Exchange Period (i.e., January 1, 2014 − September 30, 2015).

Clark has no major resources coming on line or being removed prior to the start of the FY 2016−2017 Exchange Period.

Table 2.5-1: Major Resources Coming On Line or Being Removed *Prior to* the Exchange Period

As-Filed FY 2016–2017 Exchange Period ASC ($/MWh)				
Resource	**N/A**	**N/A**	**N/A**	**N/A**
Expected On Line or Removal Date				
Delta*				

Final ASC Report FY 2016–2017 Exchange Period ASC ($/MWh)				
Resource	**N/A**	**N/A**	**N/A**	**N/A**
Expected On Line or Removal Date				
Delta*				

*The Delta is the incremental change in the ASC as major resources come on line or are removed.

For COUs only, resources that commence commercial operations during the Exchange Period are reflected in the ASC following receipt by BPA of the Utility's Major Resource Attestation. Table 2.5-2 below summarizes the major resource additions, prior to any NLSL adjustments, that are projected to become commercially operational, and the major resources that will cease to be commercially operational *during* the Exchange Period (*i.e.*, October 1, 2015–September 30, 2017).

Clark has no major resources coming on line or being removed during of the FY 2016−2017 Exchange Period.

Table 2.5-2: Major Resources Coming On Line or Being Removed *During* the Exchange Period ($/MWh)

As-Filed FY 2016–2017 Exchange Period ASC				
Resource	**N/A**	**N/A**	**N/A**	**N/A**
Expected On Line or Removal Date				
Delta*				

Final ASC Report FY 2016–2017 Exchange Period ASC				
Resource	**N/A**	**N/A**	**N/A**	**N/A**
Expected On Line or Removal Date				
Delta*				

*The Delta is the incremental change in the ASC as the major resources come on line or are removed.

2.6 NLSL Adjustment

An NLSL is any load associated with a new facility, an existing facility, or an expansion of an existing facility that was not contracted for or committed to ("CF/CT") prior to September 1, 1979, and which will result in an increase in power requirements of 10 average megawatts ("aMW") or more in any consecutive 12-month period. 16 U.S.C. § 839a(13)(A)-(B).

By law, NLSLs and associated resource costs in an amount sufficient to serve them are not included in Utilities' ASCs. *See* 16 U.S.C. § 839c(c)(7)(A). BPA determines the cost of resources in an amount sufficient to serve NLSLs through the methodology provided in Endnote d of the 2008 ASCM and Section 2.7 of this Final ASC Report.

NLSLs are not determined in the ASC Review Process. Instead, NLSLs are identified through a separate process conducted by BPA's NLSL Staff, which is tasked with implementing BPA's NLSL policy. The ASC Review Process determines the cost of resources in an amount sufficient to serve the Utility's NLSL and then excludes these costs from the Utility's ASC.

Clark currently has no NLSLs on record or new NLSLs under review, and no NLSL resource costs will be removed from its ASC.

Table 2.6-1: New Large Single Loads Under Review

As-Filed FY 2016–2017 NLSL Load Amount (MWh)	
NLSL(s)	**Load**
N/A	N/A

Final ASC Report FY 2016–2017 NLSL Load Amount (MWh)	
NLSL(s)	**Load**
N/A	N/A

Table 2.6-2: New Large Single Loads that Begin Taking Power *Prior to* the Exchange Period

As-Filed FY 2016–2017 Exchange Period ASC (MWh)				
Customer	**N/A**	**N/A**	**N/A**	**N/A**
Expected Start Date				

Final ASC Report FY 2016–2017 Exchange Period ASC (MWh)				
Customer	**N/A**	**N/A**	**N/A**	**N/A**
Expected Start Date				

Table 2.6-3: New Large Single Loads that Begin Taking Power *During* the Exchange Period

As-Filed FY 2016–2017 Exchange Period ASC (MWh)				
Customer	**N/A**	**N/A**	**N/A**	**N/A**
Expected Start Date				

Final ASC Report FY 2016–2017 Exchange Period ASC (MWh)				
Customer	**N/A**	**N/A**	**N/A**	**N/A**
Expected Start Date				

2.7 NLSL Formula Rate

During customer workshops conducted in 2012, BPA Staff and Utilities agreed to use a formula rate calculation to remove resource costs from a Utility's ASC when an NLSL occurs after the Base Period. The formula rate was first implemented for the FY 2014–2015 Exchange Period and is described in the FY 2014–2015 Final ASC Reports, Section 2.7.

Prior to the FY 2014–2015 Exchange Period, BPA calculated the costs of serving a prospective NLSL in the ASC Review Process based on forecasts of the projected NLSL's megawatt hours ("MWh") and start date as provided by the filing Utility. BPA would then calculate two ASCs for the Utility: an ASC with the NLSL coming on line as scheduled (with an associated reduction in ASC) and an ASC with the NLSL not coming on line (and no associated reduction in ASC). This approach for determining the costs of service to an NLSL, however, led to additional administrative and calculation issues. For one, new NLSL start dates might differ from the forecast; and second, the actual MWh amounts of the NLSL might differ substantially from forecast amounts contained in the Final ASC Report.

For purposes of this Final ASC Report, no Utility identified potential NLSLs taking power prior to or during the FY 2016–2017 Exchange Period. However, in the event a Utility learns it will begin to serve an NLSL during this period, even though the NLSL is not identified herein, BPA will review and evaluate the NLSL and, as necessary, calculate a new ASC using the inputs and formula method as defined below:

$$\text{ASC} = \frac{\text{Contract System Cost} - (\text{Cost of Serving New NLSL} * \text{Actual New NLSL MWh})}{\text{Contract System Load MWh} - \text{Actual New NLSL MWh}}$$

Tables 2.7-1 and 2.7-2 show the inputs necessary to calculate a Utility's Exchange Period ASC using the above NLSL Formula Rate. The Tables include the inputs Contract System Cost ($), Cost of Serving NLSL ($/MWh), and Contract System Load (MWh). A Utility's Contract System Cost and Cost of Serving NLSL will change with each new resource addition. Therefore, Table 2.7-1 provides the various combinations of new resource additions possible and the corresponding Contract System Cost and Cost of Serving NLSL. Table 2.7-2 contains the Utility's Contract System Load, which remains unchanged with the addition of new resources.

Table 2.7-1: NLSL Formula Rate Inputs:
Contract System Cost and Cost of Serving NLSL

Inputs for both *Prior to* and *During* the Exchange Period			
	Timing of New Resource	**Contract System Cost ($)**	**Cost of Serving NLSL ($/MWh)**
None	No new resources coming on-line	N/A	N/A
Prior to	N/A	N/A	N/A
During	N/A	N/A	N/A

Table 2.7-2: Formula Rate Input:
Contract System Load

FY 2016–2017 Contract System Load (MWh)
N/A

3 FILING REQUIREMENTS

3.1 ASC Review Process – FY 2016–2017

Utilities' ASCs are established in BPA's ASC Review Processes. The ASC Review Processes for FY 2016–2017 began on June 2, 2014, with the submittal of ASC Filings by the following eight Utilities: Avista, Clark, Idaho Power, NorthWestern, PacifiCorp, Portland General, Puget, and Snohomish. An "ASC Filing" consists of two Excel-based models developed by BPA (the Appendix 1 workbook and the ASC Forecast Model), which are populated with supporting data and documentation provided by the Utility.

Notice of the ASC Review Processes was provided on BPA's REP public website, BPA's Secure REP website and via email. The Utilities posted ASC Filings on BPA's Secure REP website by the June 2, 2014 filing deadline. Parties interested in reviewing a Utility's ASC had the opportunity to request access to the Utility's ASC Filing by contacting BPA. Parties wishing to formally intervene in a Utility's ASC proceeding could file an intervention by the date identified in BPA's ASC Review Process schedule. Intervenors were afforded the opportunity to request data, submit comments, and raise issues with the Utilities' ASCs throughout a three-month period; the filing Utilities, in turn, were afforded the opportunity to respond to requests for data, raise and respond to issues, and answer any questions relative to the ASC Filings. BPA engaged in this discovery throughout the entire ASC Review Processes.

Draft ASC Reports were issued December 10, 2014, for each of the eight Utilities. The schedule afforded Parties with an approximately 4-month period (through April 13, 2015) in which to submit comments to the Draft ASC Report. Additionally, BPA offered to hold both a clarification workshop and oral argument if requested by any Party. BPA did not receive any such requests and as a result, neither event was held. See Sections 4 and 5 to review comments, if any, submitted by the Utilities and intervenors.

This Final ASC Report reflects BPA's findings following its review of Clark's ASC Filing and addresses the issues and questions raised by the Utility, intervenors, and BPA, if any, during the ASC Review Process.

For details of the ASC Review Period and guidelines, please see the Rules of Procedures, available at BPA's Residential Exchange Program website.

Final ASC Reports for each Utility are available at http://www.bpa.gov/Finance/ResidentialExchangeProgram/Pages/FY-16-17-ASC-Utility-Filings.aspx.

3.2 Explanation of Appendix 1 Schedules

The Appendix 1 consists of a series of seven schedules and other supporting information that presents the data necessary to calculate a Utility's ASC. The schedules and supporting data include the following:

1. Schedule 1 – Plant Investment/Rate Base ("Rate Base")
2. Schedule 1A – Cash Working Capital Calculation ("Cash Working Capital")
3. Schedule 2 – Capital Structure and Rate of Return ("Rate of Return")
4. Schedule 3 – Expenses
5. Schedule 3A – Taxes
6. Schedule 3B – Other Included Items ("Other Items")
7. Schedule 4 – Average System Cost
8. Purchased Power and Sales for Resale ("3-Year PP & OSS Worksheet")
9. Load Forecast
10. Distribution Loss Calculation ("Distribution Loss Calc")
11. Distribution of Salaries and Wages ("Salaries")
12. Ratios
13. New Resources – Individual and Grouped
14. Materiality for New Resource Additions
15. New Large Single Loads ("NLSL Base New-Calc")
16. Tiered Rates
17. Above-RHWM Base Calculation

3.2.1 Schedule 1 – Plant Investment/Rate Base

Schedule 1 of the Appendix 1 establishes the Utility's Rate Base, which is the value of property on which the Utility is permitted to earn a specific rate of return (calculated in Schedule 2), in accordance with rules set by the state's Public Utility Commission or other regulatory agency. The Rate Base computation begins with a determination of the Gross Electric Plant-In-Service's historical costs for Intangible, General, Production, Transmission, and Distribution Plant.

For Exchanging Utilities that provide electric, natural gas, and water services, only the portion of common plant allocated to electric service is included. These values (and all subsequent values) are entered into the Appendix 1 as line items based on FERC's Uniform System of Accounts. Each line item ("Account") is functionalized to Production, Transmission, and/or Distribution/Other in accordance with the functionalizations prescribed in Table 1 of the 2008 ASCM.

The Net Electric Plant-In-Service is determined next by entering and functionalizing depreciation and amortization reserves in the Appendix 1 and adjusting the above-calculated Gross Electric Plant-In-Service for the depreciation and amortization reserves.

Total "Rate Base" is then determined by adjusting Net Electric Plant for Cash Working Capital (calculated in Schedule 1A), Utility Plant, Property and Investments, Current and Accrued Assets, Deferred Debits, Current and Accrued Liabilities, and Deferred Credits.

3.2.2 Schedule 1A – Cash Working Capital

Cash working capital is an estimate of investor-supplied cash used to finance operating costs during the time lag before revenues are collected. This approach (cash) ignores the lag in recovery of non-cash costs of service (depreciation), deferred taxes, and other items. The Cash Working Capital concept is widely used by State Commissions and is the basic premise of the Commission's proposed working capital formula. The purpose of working capital is to compensate a utility for funds used in day-to-day operations.[3]

Cash Working Capital is a ratemaking convention that is not included in FERC's Uniform System of Accounts, but is part of all electric utility rate filings as a component of Rate Base. To determine the allowable amount of Cash Working Capital in Rate Base for a Utility, BPA allows one-eighth (1/8) of the functionalized costs of total production expenses, transmission expenses, and administrative and general expenses, less purchased power, fuel costs, and public purpose charges, into Rate Base. *See* 18 C.F.R. § 301, End. f.

3.2.3 Schedule 2 – Capital Structure and Rate of Return

Schedule 2 calculates the Utility's rate of return ("ROR") on the Utility's Rate Base developed in Schedule 1.

The 2008 ASCM requires IOUs to use the weighted cost of capital ("WCC") from their most recent State Commission rate orders. The return on equity ("ROE") used in the WCC calculation is grossed-up for Federal income taxes at the marginal Federal income tax rate using the formula described in Endnote b of the 2008 ASCM. *See* 18 C.F.R. § 301, End. b. The 2008 ASCM requires a COU to use a rate of return equal to the COU's weighted cost of debt.

3.2.4 Schedule 3 – Expenses

This Schedule represents operations and maintenance expenses for the production, transmission, and distribution of electricity. Each expense item is functionalized as outlined in Table 1 of the 2008 ASCM. Also included in Schedule 3 are additional expenses associated with customer accounts, sales, administrative and general expense, conservation program expense, and depreciation and amortization expense associated with Electric Plant-in-Service. The sum of the items in Schedule 3 reflects the Total Operating Expenses for the Utility.

3.2.5 Schedule 3A – Taxes

This Schedule presents allowable ASC costs for Federal employment tax and certain non-Federal taxes, including property and unemployment taxes. COUs are allowed to include state taxes paid "in lieu" of property taxes. State income taxes, franchise fees, regulatory fees, and city/county taxes are accounted for in this Schedule, but are functionalized to Distribution/Other and therefore not included in ASC. Taxes and fees for each state listed are grouped together and entered as "combined" line items for Appendix 1 purposes.

[3] James C. Bonbright *et al*., *Principles of Public Utility Rates* 244 (2d ed. 1988).

Federal income taxes are included in ASC and are calculated, as applicable, in Schedule 2 − Capital Structure and Rate of Return.

3.2.6 Schedule 3B – Other Included Items

This Schedule includes revenues from the disposition of plant, sales for resale, and other revenues, including electric revenues and revenues from transmission of electricity for others (wheeling). The revenues in this Schedule are deducted from the total costs of each Utility.

3.2.7 Schedule 4 – Average System Cost ($/MWh)

This Schedule summarizes the cost information calculated in Schedules 2 through 3B: Capital Structure and Rate of Return, Expenses, Taxes, and Other Included Items. The Schedule also identifies the Contract System Cost and Contract System Load, as defined below, and calculates the Utility's Base Period ASC ($/MWh).

Contract System Cost ($)

CSC includes the Utility's costs for production and transmission resources, including power purchases and conservation measures, which are includable in and subject to the provisions of the 2008 ASCM. CSC does not include distribution costs or the cost of serving a Utility's NLSLs. CSC is the numerator in the ASC calculation.

Contract System Load (MWh)

CSL is the total regional retail load of a Utility, adjusted for distribution losses and NLSLs. CSL is the denominator in the ASC calculation.

3.2.8 Purchased Power and Sales for Resale

Purchased Power is an account in Schedule 3 – Expenses, and includes all power purchases the Utility made during the year, including power exchanges. Sales for Resale is an account in Schedule 3B – Other Included Items, and includes power sales to purchasers other than ultimate consumers. Listed in the information for both accounts are the statistical classification codes for all transactions. See FERC Form 1, pages 310-311 for Sales for Resale, and pages 326-327 for Purchased Power, for identification of the classification codes.

3.2.9 Load Forecast

Each IOU is required to provide a four-fiscal-year forecast of its total retail load beginning October 1 of the Base Year (*i.e.*, 10/2013 – 9/2017), as measured at the meter. For COUs, the total retail loads for this time period are forecast by BPA with the net requirements being computed consistent with the Tiered Rate Methodology ("TRM"). See the Tiered Rates tab in Appendix 1.

Additionally, each COU is required to provide a four-fiscal-year forecast of its qualifying residential and farm retail load, as measured at the retail meter. However, due to the 2012 REP Settlement Agreement, the IOUs are no longer required to submit residential and farm load forecasts.

The total retail load forecasts for all Utilities, and residential and farm load forecasts for the COUs, are adjusted for distribution losses. In addition, the total retail load forecasts are adjusted for any NLSLs. The resulting load forecasts are the Contract System Load forecast and Exchange Load forecast, respectively.

3.2.10 Distribution Loss Calculation

Each Utility is required to provide a current distribution loss study as described in Endnote e of the 2008 ASCM. *See* 18 C.F.R. § 301, End. e. The total retail and residential and farm load forecasts are adjusted for distribution losses (and NLSLs when appropriate).

3.2.11 Distribution of Salaries and Wages

This supporting tab is used to determine the Labor Ratio calculations. It includes salaries and wages from relevant operations and maintenance of the electric plant.

3.2.12 Ratios

The Ratios tab calculates all functionalization ratios by assigning costs included in the Utility's FERC Form 1 on a pro rata basis using values taken from the gross plant data (Schedule 1) for Production, Transmission, and Distribution/Other functions, and data taken from the salary and wage tab for Labor functions. For COUs, comparable information comes from the detailed salaries and wages data used in the Utilities' financial reports.

3.2.13 Major Resources – Individual and Grouped

The 2008 ASCM allows a Utility's ASC to adjust during the Exchange Period to reflect the addition or loss of a major resource, when adding or removing the resource results in a change of the Utility's Base Period ASC of two and one-half percent (2.5%) (the materiality threshold) or more. New resources are defined as any new production or new generating resource investments, new transmission investments, long-term generating contracts, pollution control and environmental compliance investments relating to generating resources, transmission resources or contracts, hydro relicensing costs and fees, and plant rehabilitation investments. *See* 18 C.F.R. § 301.4(c)(3)(i)-(vii). For major resource reductions, the change to ASC will become effective when the resource is sold, retired, or transferred. 18 C.F.R. § 301.4(c)(2)

See Section 2.5 for a discussion of ASC Major Resource Additions or Removals.

To determine the effects of a major resource addition or reduction on a Utility's Exchange Period ASC, BPA performs one of the following calculations: (1) for major resources of all Exchanging Utilities that are expected to be on line, or be removed, prior to the start of the Exchange Period, BPA projects the costs of the resource forward to the midpoint of the Exchange Period; or (2) for major resources of COUs only that are expected to be on line, or be removed, during the Exchange Period, BPA calculates the resource cost as if the resource came on line, or was removed, at the midpoint of the Exchange Period. Under the REP Settlement, IOUs no longer include major resource additions that come on line during the Exchange Period. See Section 2.5.

Each resource that satisfies the minimum materiality threshold of one-half percent (0.5%) may be entered individually in the "New Resources – Individual" tab. Resources that do not meet the two and one-half percent (2.5%) materiality requirement independently may be grouped together with other resources within "New Resources – Grouped" tab to meet the two and one-half percent (2.5%) materiality requirement. The grouping and timing of materiality for new resource additions are discussed in Section 3.2.14 of this Report.

3.2.14 Materiality for New Resource Additions

The 2008 ASCM states:

> Major resource additions or reductions that meet the criteria identified in paragraph (c)(3) of this Section will be allowed to change a Utility's ASC within an Exchange Period provided that the major resource addition or reduction results in a 2.5 percent or greater change in a Utility's Base Period ASC. Bonneville will allow a Utility to submit stacks of individual resources that, when combined, meet the 2.5 percent or greater materiality threshold, provided, however, that each resource in the stack must result in a change to the Utility's Base Period ASC of 0.5 percent or more.

18 C.F.R. § 301.4(c)(4).

Under the 2008 ASCM, a Utility may group or stack resources that individually result in a change in a Utility's Base Period ASC by one-half percent (0.5%) or more to meet the two and one-half percent (2.5%) materiality threshold. A stacked group of resources will not be added to the Utility's ASC until the last resource in that stack comes on line. The grouping of resources together, therefore, has a significant impact on the timing of when a Utility's ASC is changed as a result of a new resource addition.

BPA made materiality determinations for all new resources submitted by each Utility in its Draft ASC Report. To make these determinations, BPA provided the following instructions to the Exchanging Utilities in the 2016-2017 Draft ASC Report:

- The Utility must include the costs and operating characteristics for each new resource addition.

- The Utility must submit the resource additions (individual and/or grouped) that meet the materiality test(s) given the Utility's Base Period costs.

- BPA Staff will review each new resource addition submitted by the Utility to determine the adequacy of costs and operating characteristics.

- BPA Staff will calculate the materiality of a Utility's resources using the Utility's adjusted Base Period ASC (per the Draft ASC Report) and forecast natural gas prices used in BPA's Rate Case Initial Proposal. BPA Staff will remove all resources and/or groups of resource additions that do not meet the materiality test(s).

- BPA Staff will not unilaterally regroup resources.

- The Initial Proposal's natural gas price forecast will be the basis for the natural gas fuel costs used to calculate the materiality for new resource additions in both the Draft and Final ASC Reports.

- The Utility will have the option to recommend a "regrouping" of resource additions that meet the materiality test(s).

- Utilities must submit the regrouped resource additions in their comments on the Draft ASC Report.

- Only resources that were reviewed by BPA and participants can be used in the regrouping process.

- BPA Staff will make a determination of the new resource additions for the Final ASC Report.

- For the Final ASC Report, BPA will calculate the materiality of the Utility's resources under the Utility's final Base Period ASC.

The final grouping of new resources will be determined after considering the filing Utilities' and other parties' comments on the Draft ASC Report based on the foregoing instructions.

The materiality determinations provided in this Final ASC Report are based on the Utility's Final Base Period ASC (per the Draft ASC Report) and reflect the natural gas price forecast from the BP-16 Rate Case Initial Proposal.

3.2.15 New Large Single Loads

This tab calculates the cost of resources in an amount sufficient to serve an NLSL, which BPA must exclude from a Utility's ASC pursuant to Northwest Power Act section 5(c)(7). An NLSL is any load associated with a new facility, an existing facility, or an expansion of an existing facility which was not CF/CT prior to September 1, 1979, and which will result in an increase in power requirements of ten (10) aMW or more in any consecutive 12-month period. 16 U.S.C. § 839a(13)(A)–(B). By law, BPA must exclude from a Utility's ASC the load associated with an NLSL and an amount of resource costs sufficient to serve such NLSL. *See* 16 U.S.C. § 839c(c)(7)(A). To determine the amount of resource costs to exclude from a Utility's ASC, BPA follows the methodology described in Endnote d of the 2008 ASCM. *See* 18 C.F.R. § 301, End. d.

3.2.16 Tiered Rates

All exchanging COUs have the right to purchase power at BPA's Tier 1 rate by executing Contract High Water Mark ("CHWM") Contracts with BPA. By signing the CHWM Contract, the Utility agrees to limit the resources it will exchange in the REP. Under the CHWM Contract,

the COU agrees to exclude from its ASC the cost of resources necessary to serve the COU's Above-RHWM load. The CHWM Contracts require the cost of serving Above-RHWM loads to be calculated using a methodology similar to Endnote d of the 2008 ASCM. See Section 3.3 of this Final ASC Report for details.

Data input in this tab is used to calculate the cost of Tier 1 Power Purchases from BPA, and comes from BPA's Power Rates group. For background information and details, see http://www.bpa.gov/news/pubs/PastRecordsofDecision/2009/TRM-12S-A-02.pdf.

3.2.17 Above-RHWM Base Calculation

The Above-RHWM Base Calc Tab calculates the cost of resources in an amount sufficient to serve a COU's Above-RHWM load. Under the TRM and CHWM Contracts, BPA must exclude from a Utility's ASC any Above-RHWM load and an amount of resource costs sufficient to serve such Above-RHWM load. To determine the amount of resource costs to exclude from a Utility's ASC, BPA follows the methodology described in Exhibit D of the Utility's CHWM Contract.

The associated Above-RHWM Ratios tab calculates the functionalization ratios used to allocate the total amount of materials and supplies cost, general plant and general plant depreciation expense, administrative and general costs, Federal and state employment taxes, and property taxes that are to be included in the total costs of resources used to meet a Utility's Above-RHWM load.

3.3 Rate Period High Water Mark ASC Calculation Under the Tiered Rate Methodology

CHWM Contracts require that the cost of resources used to meet Above-RHWM loads be calculated using a methodology similar to Endnote d of the 2008 ASCM. BPA uses the following method to determine the ASC of a COU that is participating in the REP.

- $$\text{RHWM ASC} = \frac{\text{Contract System Cost} - \text{NewRes\$}}{\text{Contract System Load} - \text{NewResMWh}}$$

- NewRes$ is the forecast cost of resources used to serve a customer's Above-RHWM Load. The costs included in NewRes$ will be determined using a methodology similar to Appendix 1, Endnote d, of BPA's 2008 ASCM and as described below.

- NewResMWh is the forecast generation from resources used to serve a customer's Above-RHWM Load. For this Final ASC Report, the NewResMWh has been set equal to the customer's Above-RHWM Load.

- For calculating both NewRes$ and NewResMWh, Existing Resources for CHWMs specified in Attachment C, Column D, of the TRM (*see* TRM-12S-A-03, September 2009, Attachment C) and purchases of power at Tier 1 rates from BPA are excluded.

A number of considerations are used in calculating the cost of serving Above-RHWM Loads using Endnote d of the 2008 ASCM:

- Types of resources to serve Above-RHWM Loads may be different from those resources used in the NLSL resource cost calculation and will be recognized in calculating RHWM ASC:
    - Power purchases less than five years in duration.
- Total output of new resources may exceed Above-RHWM Load:
    - RHWM ASC does not specify removal of costs associated with this excess.

RHWM ASC calculation methodology:

- Set NewResMWh equal to Above-RHWM Load.
- NewRes$ = NewResMWh times Fully Allocated Cost (calculated using Endnote d).
- If output of material new resources fails to meet Above-RHWM Load, meet deficit with short-term ("ST") market purchases at utility-specific market price.
- If output of new resources exceeds Above-RHWM Load, reduce ST market purchases by excess to the extent possible in Contract System Cost calculation.
- Sell any remaining surplus at utility-specific Sales for Resale price in the Contract System Cost calculation.

3.4 ASC Forecast

Once the Base Period ASC is calculated, BPA uses the ASC Forecast Model to escalate forward the Base Period ASC to the midpoint of the Exchange Period. The ASC Forecast Model uses IHS Global Insight's (an international economic and market forecasting company) forecast of cost increases for capital costs and fuel (except natural gas), operations and maintenance ("O&M"), and general and administrative ("G&A") expenses; BPA's forecast of market prices for purchases to meet load growth and to estimate short-term and non-firm power purchase costs and sales revenues; BPA's forecast of natural gas prices; and BPA's estimates of the rates it will charge for its PF rate and other products. For both the Draft and Final ASC Reports, BPA updates the escalators in the ASC Forecast Model to be consistent with the escalators used in the BP-16 rate proceeding. For additional background on the determination of Exchange Period ASCs, see the 2008 ASCM, 18 C.F.R. § 301.4.

3.4.1 Forecast Contract System Cost

Forecast Contract System Cost includes a Utility's forecast costs for production and transmission resources, including power purchases and conservation measures, which are includable in and subject to the provisions of the 2008 ASCM. BPA escalates Base Period costs to the midpoint of the Exchange Period to calculate Exchange Period ASCs. *See* 18 C.F.R. § 301.4(a).

3.4.2 Forecast of Sales for Resale and Power Purchases

BPA does not normalize short-term purchases and sales for resale. The short-term purchases and sales for resale for the Base Period are used as the starting values for the forecast. Utilities are then allowed to include new plant additions and use utility-specific forecasts for the (1) price of long-term purchased power contracts, and (2) long-term sales for resale price contracts to value purchased power expenses and sales for resale revenue. *See* 18 C.F.R. § 301.4(b).

3.4.3 Forecast Contract System Load and Exchange Load

As a part of its ASC Filing, each IOU is required to provide a four-fiscal-year forecast of its total retail load, as measured at the meter. For the COUs only, total retail forecast loads, as determined by BPA under the TRM, will be provided through the end of the Exchange Period. In addition, for the COUs, qualifying residential and farm retail loads, as measured at the retail meter, are required.

Each Utility is required to submit a current distribution loss study as described in the 2008 ASCM, Appendix 1, Endnote e. The total retail and the residential and farm load forecasts are adjusted for distribution losses (and NLSLs when appropriate). The resulting load forecasts are the Contract System Load forecast and Exchange Load forecast, respectively.

3.4.4 Load Growth Not Met by New Resource Additions

All load growth not met by new resource additions is met by purchased power at the forecast utility-specific short-term purchased power price. To calculate the cost of serving load growth not served by new resource additions, BPA uses the method outlined in the 2008 ASCM. *See* 18 C.F.R. § 301.4(e).

4 REVIEW OF THE ASC FILING

Pursuant to the 2008 ASCM, the Rules of Procedure for ASC Review Processes, and section 5(c) of the Northwest Power Act, BPA is responsible for reviewing all costs, revenues, and loads used to establish ASCs for the REP. BPA began the FY 2016–2017 ASC Review Process of Clark's ASC Filing in June, 2014. BPA raised no issues related to Clark's ASC Filing in the BPA Issues and Clarification List ("BPA Issues List"); no other party raised issues. This Final ASC Report summarizes the findings of Staff's review of Clark's ASC Filing.

BPA's ASC determination is limited to specific findings on issues identified for comment, with the exception of ministerial or mathematical errors or deviations due to changes in functionalizations. There may be additional issues BPA has not identified for comment in this Final ASC Report. Acceptance of a Utility's treatment of an item without comment does not signify a decision as to the proper interpretation to be applied either in subsequent ASC Filings or universally under the 2008 ASCM. Similarly, further experience under the 2008 ASCM may result in BPA adopting a modified or different interpretation of the 2008 ASCM in future ASC reviews.

On April 3, 2014, prior to the start of the FY 2016-2017 ASC Review Processes, BPA held a workshop to review the schedule, rules of procedure, and past generic issues; explain the latest revisions to the Forecast Model; remind Utilities on general accounting and functionalization guidelines for the Appendix 1; and provide time to discuss other REP topics of interest from the Parties.

Following review and discussion, the Parties and BPA resolved all questions and were satisfied with the outcome. No further public discussions took place.

Table 4-1 summarizes any direct adjustments BPA made to Clark's Appendix 1 in this Final ASC Report as a result of BPA's review and evaluation. Supporting arguments may be found in the Resolved Issues and/or Unresolved Issues sections listed in Table 4-1.

Although a Utility's state, county, or municipal regulatory bodies, or the Commission, may allow a particular functionalization to a specific account, BPA is not required to follow that treatment when calculating ASCs under the 2008 ASCM. Rather, BPA is tasked with making an independent determination of the appropriateness of inclusion or exclusion of particular costs, the reasonableness of the costs included in Contract System Costs, the appropriateness of Contract System Loads, and the functionalization method used in the calculation of any cost in conformance with the 2008 ASCM. *See* Rules of Procedure, § 3.2.2.

Table 4-1: Summary of ASC Errata Corrections and Issues

Appendix 1 Schedule	Adjustment
Schedule 1 – Plant Investment/Rate Base	No direct adjustments.
Schedule 1A – Cash Working Capital	No direct adjustments.
Schedule 2 – Capital Structure and Rate of Return	No direct adjustments.
Schedule 3 – Expenses	No direct adjustments.
Schedule 3A – Taxes	No direct adjustments.
Schedule 3B – Other Included Items	No direct adjustments.
Schedule 4 – Average System Cost	No direct adjustments.
Appendix 1 Supporting Worksheets	**Adjustment**
Forecast Loads	No direct adjustments.
New Resource Additions	No direct adjustments.
NLSL Calculation	No direct adjustments
Wind Resources	No direct adjustments.
Tiered Rates	No direct adjustments.
Salary and Wages	No direct adjustments.
Ratios	No direct adjustments.
ASC Forecast Model	**Adjustment**
Wheeling Revenues on New Resources Tab	BPA Erratum correction. See Section 4.4.1.
ASC Reported on ASC Tab	BPA Erratum correction. See Section 4.4.2.

4.1 Errata Corrections Filed by Utility

Clark did not file any errata corrections to its June 2, 2014, ASC Filing.

4.2 Decisions on Draft Report Resolved Issues

BPA did not raise any issues with Clark's ASC Filing. Clark submitted a letter ("Declaration") on April 14, 2015 notifying BPA that it did "not have any comments to the FY 2016-2017 Draft Average Systems Cost Report." No other party raised issues with, or commented on, Clark's June 2, 2014, ASC Filing.

4.3 Decisions on Draft Report Unresolved Issues

BPA did not raise any issues with Clark's ASC Filing. No other party raised issues with, or commented on, Clark's June 2, 2014, ASC Filing.

4.4 ASC Forecast Model Errata Corrections

On May 15, 2014, BPA released its latest ASC Forecast Model to be used for the FY 2016–2017 ASC Review Processes. Following that release date and after the June 2, 2014, Utility submissions, BPA Staff discovered two formula discrepancies in the ASC Forecast Model as described below.

4.4.1 Wheeling Revenues on New Resources Tab

BPA Staff discovered a formula error in the worksheet that calculates the costs to be included in a Utility's Exchange Period ASC. The worksheet was not recognizing the wheeling revenues included on the Utility's New Resources Tab. BPA Staff corrected this error for the Forecast Model used for the Draft and Final ASC Reports. See ASC Forecast Model, Line 311 of the Total & Functionalization Tab.

4.4.2 ASC Reported on ASC Tab

BPA Staff discovered an error in the macro that reports the lowest ASC for Utilities that have either an NLSL or Above-RHWM load. When the ASC calculated with an NLSL was equal to the ASC calculated with both an NLSL and Above-RHWM load, the ASC Forecast Model would report the ASC calculated without removing the costs of serving the Utility's NLSL. BPA corrected the macro error for the ASC Forecast Model used for the Draft and Final ASC Reports. See ASC Forecast Model, Lines 106–131 of the ASCs Tab.

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5 GENERIC ISSUES

In addition to the foregoing issues, which are limited to Clark, Portland General raised one issue on the meaning of "most recently approved Regulatory Body Rate Order." This issue may be generic to all IOUs, and was not included in BPA's Issue List as a generic issue; it was included in the Draft ASC Reports. With the exception of Portland General and the Oregon Public Utility Commission, no comments were received. BPA has removed this generic issue from all ASC Reports and will address it prior to the June, 2016 ASC Filing. See Portland General's Final ASC Report, Section 4.3.1, for additional information.

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6 FY 2016–2017 ASC

Clark's As-Filed Base Period (CY 2013) ASC was $52.13/MWh. Following the Review Process, Clark's Base Period ASC remains $52.13/MWh.

Clark's As-Filed Exchange Period ASC for FY 2016–2017 was $54.42/MWh. As a result of adjustments made during the ASC Review Process, Clark's Exchange Period ASC for FY 2016-2017 decreased to $50.95/MWh.

This Exchange Period ASC reflects the fact that Clark does not have any major resources coming on line or being removed prior to or during the Exchange Period; nor does Clark have any changes in NLSL status.

7 REVIEW SUMMARY

This Final ASC Report is BPA's determination of Clark's FY 2016 and FY 2017 ASC based on information and data provided by Clark, including comments, if any, received in response to the Draft ASC Report, and based on the professional review, evaluation, and judgment of BPA's REP Staff.

BPA has resolved the issues set forth in Section 4 of this Report in accordance with the 2008 ASCM and with generally accepted accounting principles. The information and analysis contained herein properly establish Clark's ASC for FY 2016–2017.

8 APPROVAL ON BEHALF OF THE BONNEVILLE POWER ADMINISTRATION

I have examined Clark's ASC Filing and the administrative record of the ASC Review Process. Based on this review and the foregoing analysis of the issues, I certify that the calculated ASC conforms to the 2008 ASCM and generally accepted accounting principles, and fairly represents Clark's ASC.

Issued in Portland, Oregon, this 23 day of July, 2015.

BONNEVILLE POWER ADMINISTRATION

By: /s/ Mark O. Gendron
Senior Vice President for Power Services

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BONNEVILLE POWER ADMINISTRATION
July 2015