

RHWM Process Workshop

BP-16 Rate Period –
Pre-Final Determination Discussion

Rates Hearing Room
September 9, 2014



RHWM Process Workshop Agenda

Topic	Presenter
Intro and Purpose of Workshop, Introductions	Peter Stiffler
Part 1	
Importance of a change in the Tier 1 System to BPA and its Customers Customer Comment Summary	Peter Stiffler Emily Traetow Lindsay Bleifuss
Part 2	
Follow-up on Tier 1 System Changes – Fish Spill Explanations and T1SFCO revised comparison to RHWM Process Tier 1 System	
<ul style="list-style-type: none"> • Spill Assumption Changes 	Holly Harwood
<ul style="list-style-type: none"> • T1SFCO 	Tim Misyey
Part 3	
2 Proposed Alternatives Rate Impacts of Proposed Alternatives Other considerations Critical Slice Amount and Slice Block Implications	Peter Stiffler Ray Bliven Peter Burger Emily Traetow
Discussion: <ul style="list-style-type: none"> • Customer feedback on proposed alternatives, and comments to take back to BPA executive team 	All
Outline of Third Party Neutral Review Requirements in the TRM	Peter Stiffler

Significance of the Change

- Significant concern over a reduction in the Tier 1 System Firm Critical Output.
- These concerns are related to:
 - Effect of lower RHWMs on existence and amount of Above RHWM loads,
 - Rate Impact of lower Tier 1 Sales, and higher service of Above RHWM loads at Tier 2 or self-supply rates,
 - Effect of system shape changes on seasonal loads, like irrigation.
- A full 30% of customers will be impacted by higher Above RHWM loads.
- The Rate Impact of the Tier 1 sales change will affect all customers.
- Shape effects depending on shape of load-shaping rates only.
- BPA Response
 - Extension of Comment Period and delay of final determinations
 - Provision of detailed explanations for changes in Canadian operations and spill assumptions
 - Greater transparency
 - But, we cannot go back in time: lessons learned
 - Added discussion of potential alternatives

Customer Comments Review

- Impact of a lower Tier 1 System has real contract right implications; harms customers; cannot be downplayed.
- Spill assumptions are speculative; alternative assumptions could be made.
- Canadian operations are based upon 6-year-old plans; archaic and not real?
- Potential alternatives exist
 - Phase in adjustment over two rate periods
 - Revert back to BP-14 RHWM Process regulated hydro generation forecast
- Request for additional data:
 - Revised delta comparison on monthly basis for BP-14 RHWM Process T1SFCO compared to proposed BP-16 RHWM Process T1SFCO
 - Description of anticipated Canadian Operations over the remainder of the Regional Dialogue contracts period

Spill Assumptions

Follow-up Items from August 26, 2014 workshop

HYDSIM Spill Assumptions

Additional information requested about John Day and Ice Harbor spill assumptions:

- BPA is no longer assuming that lower spill amounts will be implemented at these dams during this rate period.

- There is uncertainty regarding timing of completion of successful tests, for example:
 - Tests must achieve the required statistical precision
 - Tests are very expensive and must be accommodated within the Corps budget
 - Very dry and very wet years are not suitable for testing

- There is uncertainty regarding what spill levels will ultimately be determined to be necessary to meet the performance standard.
 - Spill levels for testing at Ice Harbor have not yet been determined
 - If actual spill levels during the test exceed planned spill levels by more than the allowed margin, the planned spill level must be increased or the test redone

HYDSIM Spill Assumptions

The 2014 – 2018 Implementation Plan formalized a process for reviewing performance standard test results and documenting achievement of the performance standards:

- Process includes detailed technical review of the performance tests
 - Did tests meet requirements to be used to show standards are met?
- Corps considers information gained from the review

HYDSIM Spill Assumptions

- After two consecutive acceptable tests have been completed at a project, the Corps will prepare a decision memo with rationale and determination that the standards have been met.
- Corps memo provided to Regional Implementation Oversight Group (RIOG).
 - If disagreement with Corps' decision – dispute resolution process.
- Corps and NOAA consider input from RIOG and make a final determination.

HYDSIM Spill Assumptions

John Day Dam – Tests have been completed (second summer test completed in 2014) and are in the queue for consideration in the process. Tests of both 30% spill and 40% spill were conducted.

Ice Harbor Dam – Tests are tentatively scheduled to occur in 2015 and 2016. Spill level for testing has not yet been determined.

Process status – Corps has completed a preliminary draft of the first acceptance memo (for The Dalles Dam where tests were completed in 2012) but has not yet provided the document to the RIOG.

HYDSIM Spill Assumptions

Additional information requested about voluntary spill treated as mandatory spill:

- The FCRPS Biological Opinion would not use terms such as “voluntary spill” and “planning dates” if these operations were set in concrete.
- Voluntary spill in the BiOp section referenced refers to the spill that is planned for and provided at the four lower Snake River and four lower Columbia River dams for the benefit of juvenile fish passage, in accordance with the operative biological opinions and the Clean Water Act.
- All other spill is considered involuntary because it is driven largely by hydrologic capacity at each dam; the quantity of water that exceeds the capacity of a dam to either temporarily store the water upstream of the dam or pass the water through its turbines. In these circumstances, water must be released through the spillway. Involuntary spill occurs primarily due to lack of available turbine capacity or lack of demand for the electricity.

BP-16 RHW M Process Tier 1 System Firm Critical Output

BP-16 RHWM - Federal Tier 1 System Firm Critical Output

- BP-14 RHWM Process for FY2015-16 was completed on a now retired system (LaRIS).
 - When LaRIS was retired only White Book and Rate Case Studies were archived.
 - The BP-RHWM Process was not archived.
- The monthly aggregated BP-14 RHWM values for FY 2014-15 are presented.
- The monthly regulated hydro generation values, which are the main drivers in the BP-14 RHWM generation estimates, are also presented here.

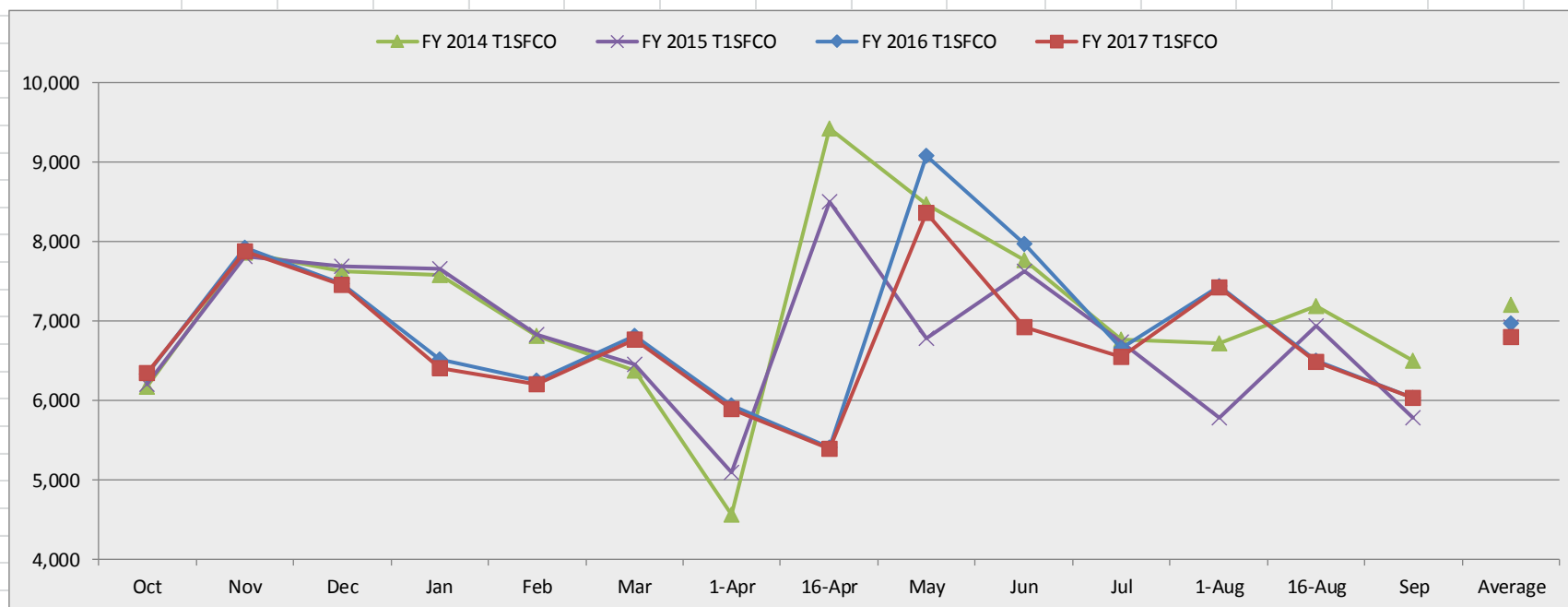
BP-16 RHWM - Federal Tier 1 System Firm Critical Output RHWM Comparison from BP-14 RHWM Process

2-Year Average Comparison BP-16 Final BP-14 RHWM Process <i>(Energy in aMW)</i>	BP-16 Prelim Proposal	BP-14 RHWM Process	Difference 2-Year Average	Comment
T1SFCO Projections				
1. Federal System Hydro Generation	6,664	6,846	-181	Changes in spill criteria on Lower Snake projects in the 2014 BiOp Implementation Plan that highlights spill even in low water conditions
2. Designated Non-Fed Owned Res.	1,050	1,022	28	Resource changes: CGS (+42 aMW), GP-Paper (Wauna) (-14 aMW)
3. Designated BPA Cont. Purchases	177	159	18	Expiration of BPA/PASA contract 4/30/2015 and BPA/RVSD contract 4/30/2016 (-18 aMW)
4. Designated System Obligations	-1,005	(967)	-38	Obligation changes: CER to Canada (-6 aMW), LCA (8 aMW), Expiration of BPA/PASA contract 4/30/2015 and BPA/RVSD contract 4/30/2016 (-13 aMW)
5. Federal T1SFCO Output	6,886	7,059	-173	

BP-16 RHW M Process

Table 2.12.1
Summary of Monthly T1SFCO for FY 2014 through 2017
 BP-16 Preliminary Rate Case versus 2014 Preliminary RHW M Process

FY	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Average
FY 2014 T1SFCO	6,174.4	7,856.3	7,630.5	7,579.6	6,813.1	6,371.4	4,554.9	9,426.5	8,467.7	7,771.8	6,760.9	6,714.5	7,183.0	6,503.8	7,196.8
FY 2015 T1SFCO	6,198.0	7,811.5	7,686.8	7,650.5	6,829.5	6,453.3	5,096.9	8,505.9	6,776.1	7,618.7	6,727.7	5,779.6	6,935.0	5,780.9	6,919.5
FY 2016 T1SFCO	6,333.7	7,924.9	7,461.2	6,508.0	6,250.0	6,814.0	5,931.2	5,401.8	9,074.0	7,975.9	6,656.8	7,439.6	6,493.2	6,024.9	6,975.0
FY 2017 T1SFCO	6,345.4	7,876.4	7,445.5	6,411.2	6,194.6	6,767.5	5,887.7	5,383.8	8,365.7	6,924.8	6,552.1	7,426.0	6,479.6	6,027.0	6,797.2

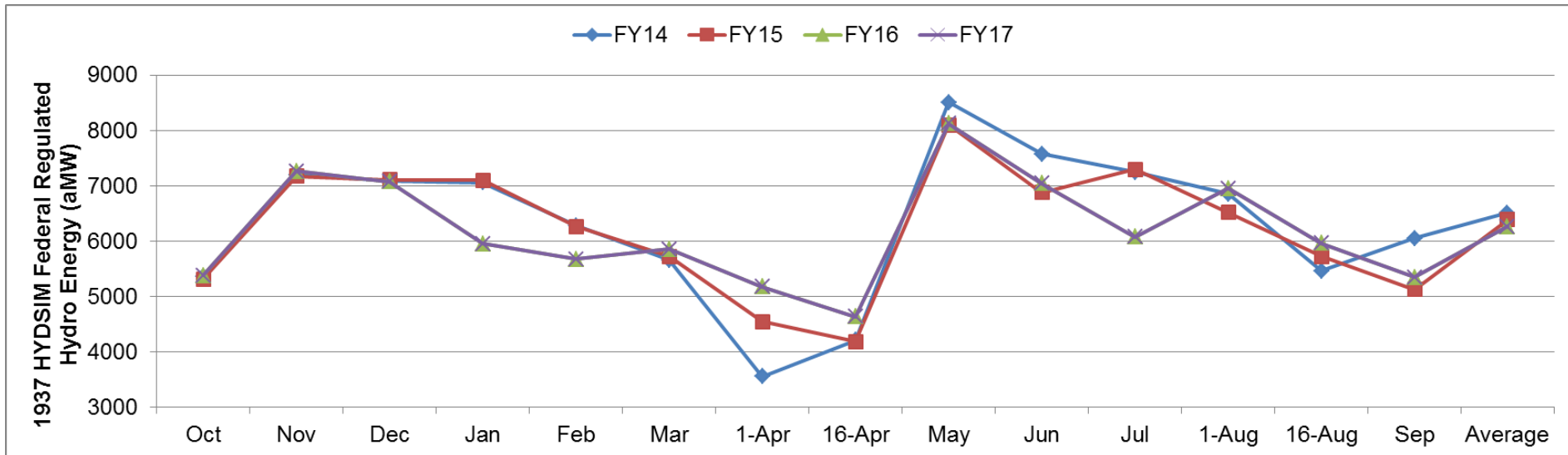


Source for FY 2014-15: Preliminary 2014 T1SFCO Process - Study 80/Study80-T1SFCO CalculationD04112012.xls

Source for FY 2016-17: LT-LORA Study: S113-RC-20140724-130549

BP-16 & BP-14 RHW M Firm Federal Regulated Hydro

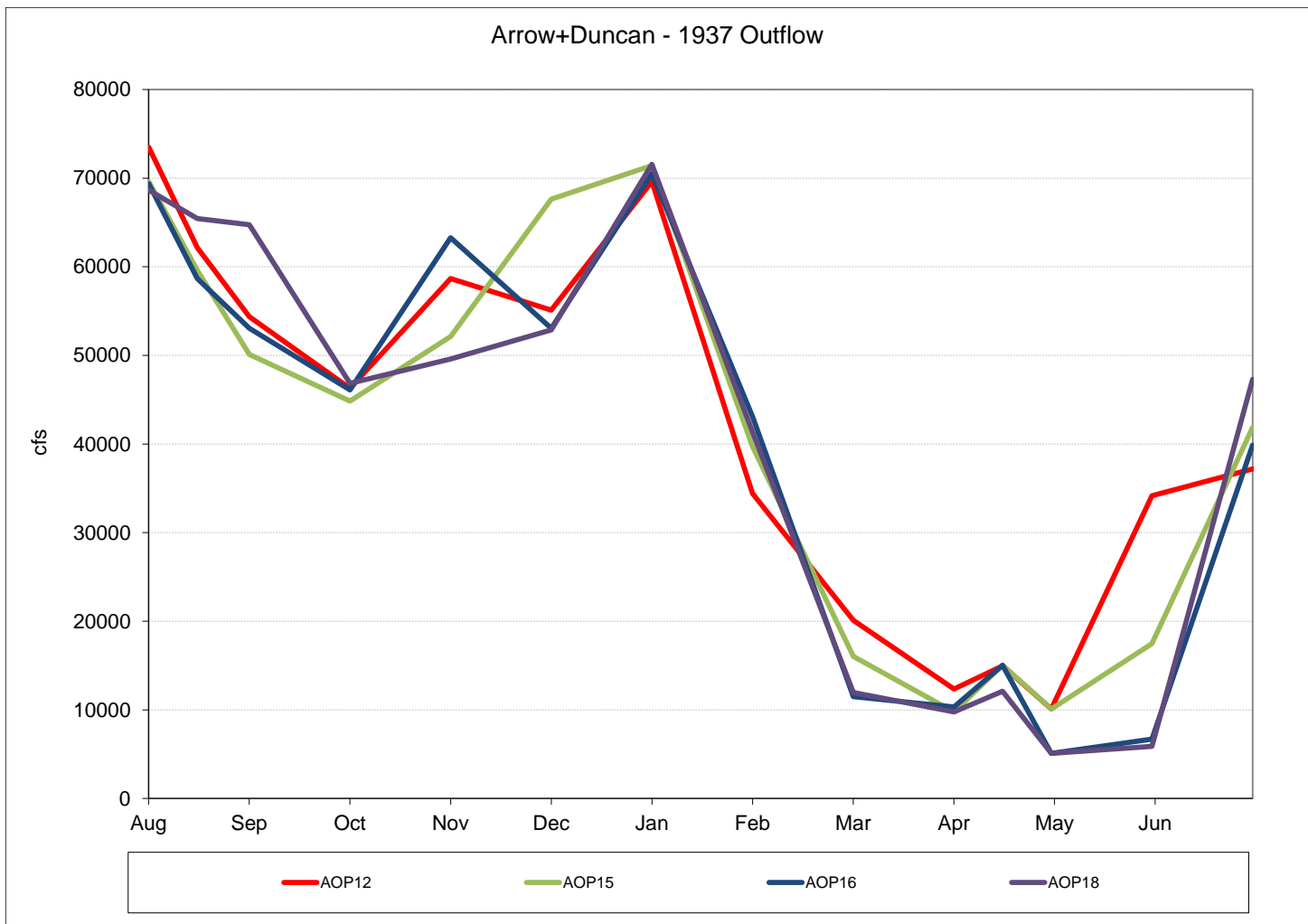
FY	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Average
FY14	5350	7195	7091	7057	6275	5654	3555	4203	8503	7568	7245	6849	5461	6052	6506
FY15	5314	7167	7102	7099	6263	5725	4543	4180	8094	6872	7296	6516	5719	5121	6383
FY16	5379	7258	7072	5953	5669	5849	5173	4632	8122	7036	6073	6948	5961	5348	6265
FY17	5379	7258	7072	5953	5669	5849	5173	4632	8122	7036	6073	6948	5961	5348	6265



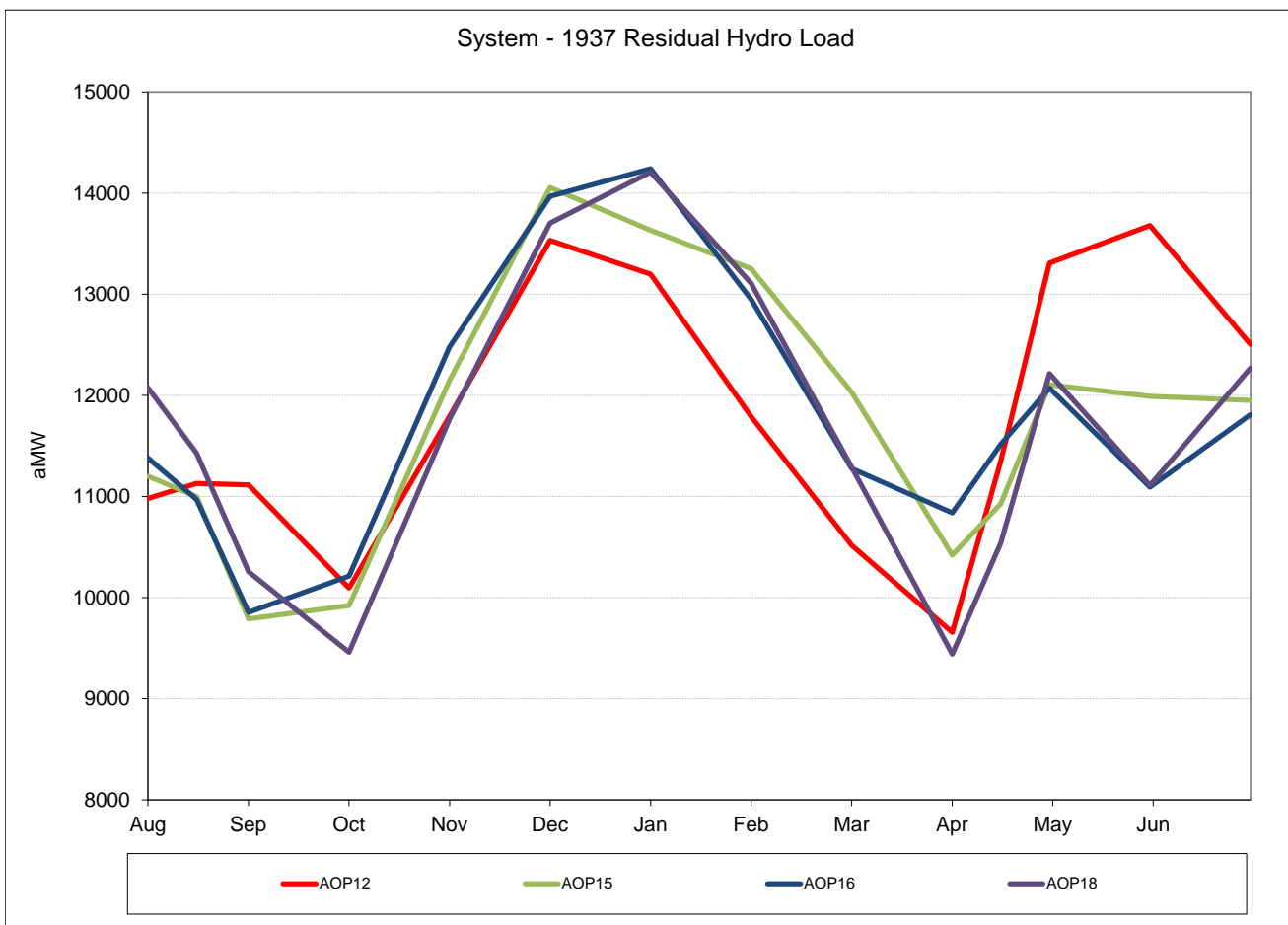
- The current RHW M studies (FY16 & FY17) reflect numerous modeling updates that have been incorporated into HYDSIM studies since the BP-14 RHW M studies (FY14 & FY15) were completed in April 2012.
- These changes include, but are not limited to: updates to Canadian operations, flood control data, Grand Coulee operations, loads, outage assumptions, PNCA project data, and spill assumptions.

Canadian Operations Forecast Beyond BP-16

- Operation plans as set under the Treaty establish **real** Canadian flow requirements.
 - *Operating plans are set under the Treaty and prepared 6 years in advance by the U.S. and Canadian Entities.*
 - Operating plans contain forecast regional loads and resources and operating criteria that define the Canadian operation to be used in the actual operating year; but once those studies are complete, plans determine actual operations.
 - For example, the AOP16 was executed in September 2011 and the loads, resources and operating criteria in the AOP16 will be used in 2016.
 - The loads/resources used to define the Canadian operation are not the same as those used in the RHWM studies for U.S. project operations.
- It is impossible to forecast Canadian operations through 2028. Current AOP covers through 2019, so some information on likely changes for the BP-18 period are discussed here.
 - AOP18 (used for 2018 and 2019) is very similar to AOP16, so I would not expect major changes to 1937 Arrow + Duncan annual average outflows through July 2019.
 - But, as detailed in the August 26, 2014 workshop, rate case assumptions regarding supplemental operating agreement and other contracts may differ in the future.



Arrow+Duncan - Outflow (cfs)															
	August I	August II	September	October	November	December	January	February	March	April I	April II	May	June	July	Annual
AOP12	73,490	62,154	54,376	46,299	58,663	55,117	69,604	34,416	20,100	12,364	14,953	10,100	34,159	37,196	41,855
AOP15	-3,879	-2,543	-4,261	-1,462	-6,530	12,521	1,818	5,302	-4,073	-2,603	93	0	-16,692	4,670	-1,082
AOP16	-4,107	-3,481	-1,319	-190	4,612	-2,059	911	8,686	-8,618	-2,025	80	-5,000	-27,462	2,661	-2,766
AOP18	-4,841	3,285	10,365	557	-9,075	-2,248	1,970	6,930	-8,152	-2,599	-2,853	-5,000	-28,272	10,100	-2,201



	August I	August II	September	October	November	December	January	February	March	April I	April II	May	June	July	Annual
AOP12	10,982	11,130	11,115	10,095	11,793	13,532	13,199	11,791	10,517	9,657	11,351	13,309	13,679	12,504	11,927
AOP15	220	-131	-1,325	-173	356	525	433	1,463	1,513	765	-422	-1,204	-1,688	-554	-43
AOP16	399	-159	-1,261	119	686	436	1,043	1,159	760	1,182	166	-1,237	-2,585	-695	-70
AOP18	1,092	299	-859	-636	-28	171	1,007	1,318	771	-216	-809	-1,094	-2,567	-233	-168

Rate Impact of Above RHWM Loads

- BPA isolated the effect of a change in the Tier 1 System on Above HWM loads service by removing the effect of a change in customer loads:
 - Compute new Above RHWM loads assuming the BP-14 RHWM Tier 1 System Capability, and subtract these Above RHWM Loads from those computed in this RHWM Process for BP-16.
 - This difference results in the change in Above RHWM loads attributed to the change in the Tier 1 system calculation.

Summary Across All Customers

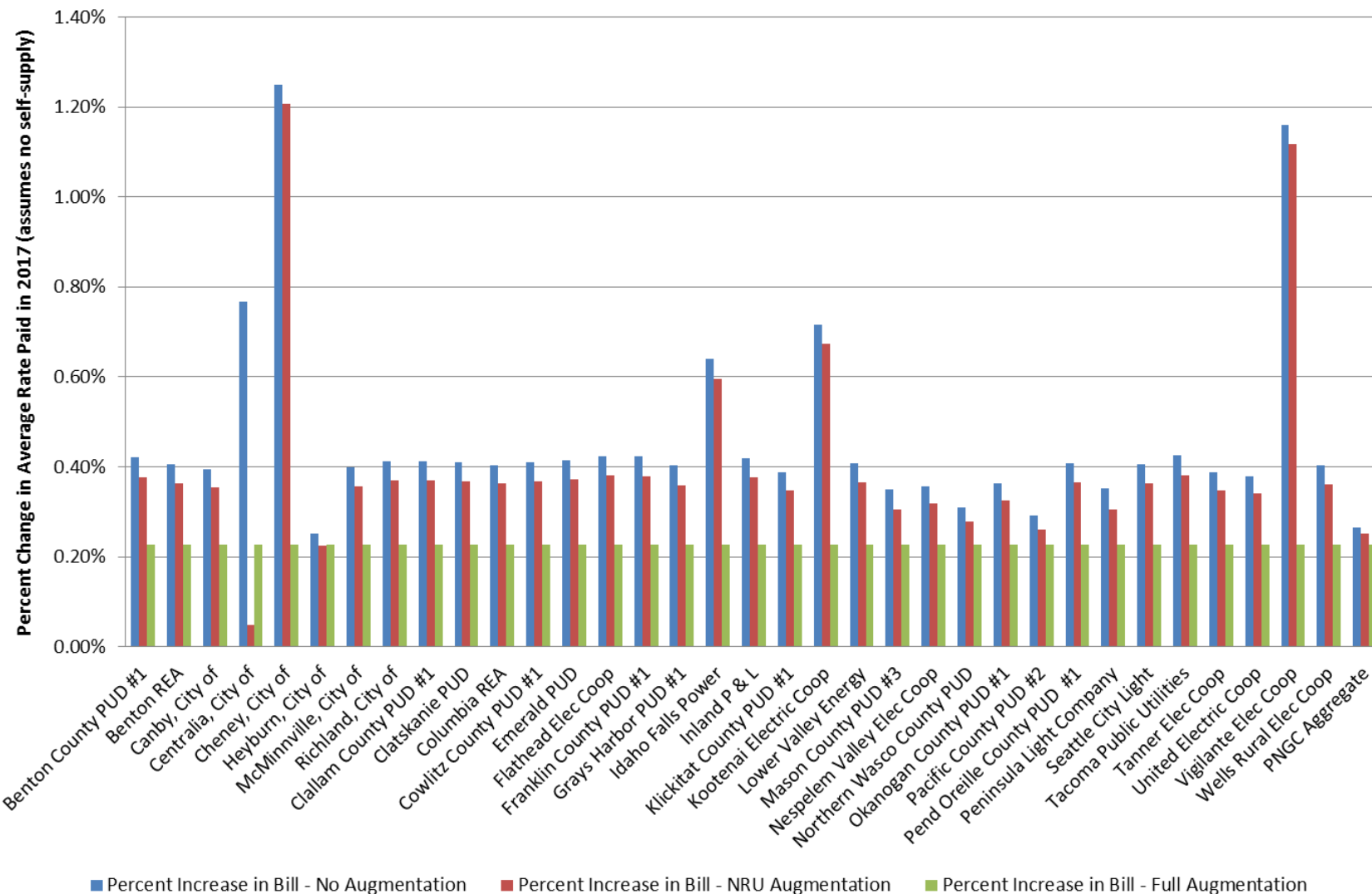
Average Above RHWM load across all customers	0.59% of Gross Net Requirement Load*
Proportion of customers affected	30% of all Preference Customers
Average Above RHWM load change among affected customers	1.97% of Gross Net Requirement Load*

*Adjustment not made for self-supplied Above RHWM Load.

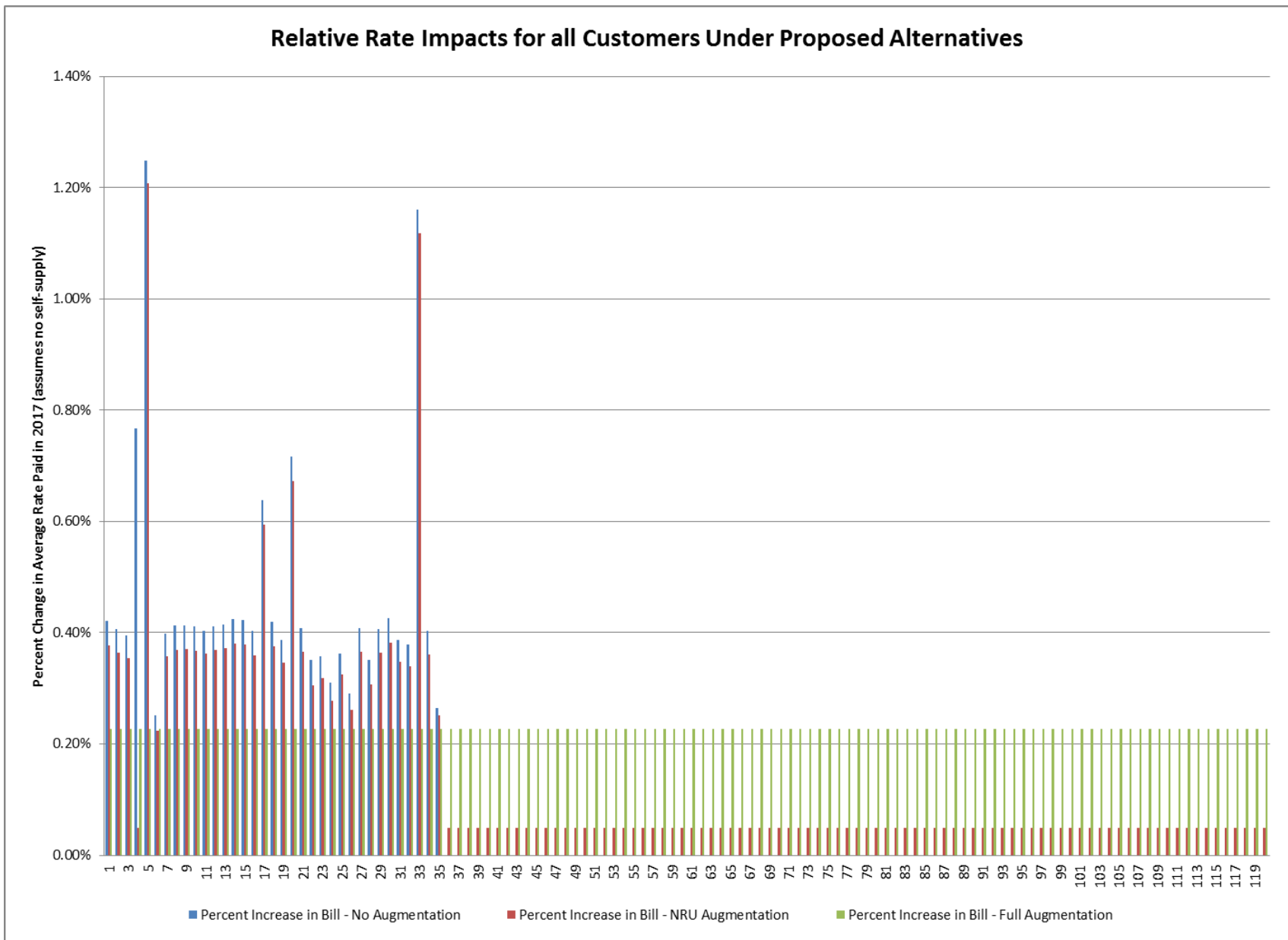
Scenarios Considered

- BPA is considering the following scenarios after reviewing customer comments:
 - Phase in change over 2 rate periods (stepped into over 4 years) of spill implementation assumptions on Snake River:
 - 75aMW of loss generation was attributable to a presumably permanent change in spill versus transport operations under dry water conditions,
 - Step into the 75aMW, 37.5 aMW in this rate period, and 37.5aMW in BP-18.
 - Hold the T1SFCO equal to prior rate period levels and delay effect of spill and Canadian operation assumptions until more is known about the to-be implementation of the 2014 Biological Opinion.
- BPA is *considering* these alternatives:
 - BPA is looking for customer consensus on stepping away from the modeled Tier 1 system for the BP-16 period, as presented in this process, and to implement an alternative T1SFCO for RHWL calculation purposes only.
 - BPA staff will take into account legal and other considerations when making recommendations to the Administrator.

Relative Rate Impacts for Customers with Additional Above RHEM Loads Caused by Tier 1 System Reduction



Relative Rate Impacts for all Customers Under Proposed Alternatives



Additional Considerations

■ Legal considerations

- Assertion of flexibility for the Administrator to determine timeframe has been questioned by Bonneville General Counsel. They point to Section 3.1.2, which states, “BPA will determine the Tier 1 System Firm Critical Output as a **two-year** average of the Firm Critical Output of the Tier 1 Resources (section 3.1.3) less Tier 1 System Obligations.”
- Potentially may require a change to the TRM.

■ Slice versus Non Slice impacts

- BPA staff are still exploring this issue, but after general discussion have identified at least one consideration.
- The system from the RHWM Process could be (and most likely would be) used to set Critical Slice Amounts.
 - Roughly 50% of the additional RHWM going to these slice customers would be slice product.
- Slice customers do **not** true up to actual System Augmentation expenses.
- Scenario: assume we observe a ~58 MAF water year similar to 1937/2001.
 - In this case, BPA would need to purchase to meet this slice resource load using financial reserves at high market prices for which Non Slice customers paid, and any trigger in the CRAC would be paid by Non Slice loads.

RHWM T1SFCO and Critical Slice Amounts

- Exhibit I of the Slice/Block contracts establishes the Critical Slice Amounts for each of the Slice/Block customers. The Critical Slice Amounts are determined annually for the upcoming Fiscal Year as part of the Annual Net Requirement Process.
- Critical Slice Amounts equal a Customer’s Slice Percentage multiplied by the Adjusted Annual RHWM Tier 1 System Capability (AART1SC). The amounts used for the AART1SC are the Fiscal Year amounts used to calculate the RHWM Tier System Capability adjusted for “known and determinable events”.

Slice Percent	0.0350000			
TRL less Dedicated Resources	525			
annual aMW:	Example 1	Example 2	Example 3	
T1SFCO	7000	7200	7200	
RHWM	500	514	514	
Net Requirement	500	514	514	
AART1SC*	7000	7200	7000	
Critical Slice Amounts	245	252	245	
Tier 1 Block Amounts	255	262	269	
TOCAs:				
Slice TOCA	0.0350000	0.0350000	0.0350000	
Non-Slice TOCA	0.0364286	0.0364286	0.0364286	
TOCA	0.0714286	0.0714286	0.0714286	
*simplified for the examples by using two-year average				

- Example 2 shows that the Critical Slice Amounts and Tier 1 Block Amounts increase by the same amount when the increased T1SFCO is also used as the AART1SC.
- Example 3 shows that only the Tier 1 Block Amounts increase when the AART1SC is no longer based on the T1SFCO.
- In example 3, 7 aMW of Tier 1 Block is being purchased at Load Shaping, see calculations below.
- Load Shaping Amounts = Tier 1 Block Amounts - (NonSlice TOCA * T1SFCO), or
 $7 = 269 - (0.0364286 * 7200)$, $7 = 269 - 262$

Supporting Data

- Available on the BP-16 Website:
 - Detailed tables from the BP-14 RHWM Process on an annual basis and monthly for the aggregated RHWM T1SFCO for FY 2014-15,
 - Detailed tables for the BP-16 RHWM Process presented both annually and monthly,
 - Rate Impact Analysis (in Excel),
 - Excerpts from the 2014 Biological Opinion.

Third Party Neutral Review

- BPA plans to compile all comments and materials to provide internally to the executive team on September 11.
- Customers who would like to make additional comments beyond what was expressed in this September 9th workshop may do so by emailing Peter Stiffler at pbstiffler@bpa.gov.
- Bonneville *expects* to repost its Final Determinations on **September 15, 2014**.
- Customers will then have **10 calendar days**, per Section 13.10 of the TRM, to seek third party neutral review. To contest the T1SFCO study, customers must concurrently submit along with their request for review, written votes in support of such requests by at least 70 percent of BPA customers (84 customers).
- Submissions should be made to Peter Stiffler (pbstiffler@bpa.gov), and Geoff Carr (geoffcarr77@gmail.com).
- Only customers that reserved the right to dispute by August 8, 2014 may seek non-binding third party neutral review. Third party neutral review for this RHWM process is confined to review of the Tier 1 System Firm Critical Output study.