IPR Follow Up Questions

General

1. **BPA indicated cost savings through attrition in power services, transmission, and enterprise. Can BPA provide the total savings for the organization related to staffing reduction, broken out between power services, transmission services, and enterprise?**

   In the organizations where attrition has been referenced, it has been to absorb other cost pressures (including inflation in personnel cost) in order to keep the total spending levels at or below the rate of inflation. This includes reducing actual headcount and/or managing attrition so that a lapse occurs between the time an employee leaves and a replacement comes on board. As such we do not consider these actions to represent discrete "savings" but rather management actions required to achieve BPA's strategic cost management targets.

2. **Please provide a table of "potential power rate effects" with estimated changes from FY 20/21 to FY 22/23 similar to the table BPA provided for its 2016 IPR Kick-off presentation showing estimated changes from FY 16/17 to FY 18/19 and break outs of estimated IPR Expenses, Non-IPR Costs, and Revenue Changes. In the alternative, please provide a BP-22 Rate Preview as part of the BP-22 Rate Case Workshops like the BP-20 Rate Preview BPA presented on July 25, 2018 as part of the BP-20 Rate Case Workshops. Although we understand that such information would be preliminary and include much uncertainty, the WPAG utilities have nonetheless found it helpful in the past.**

   The IPR Publication includes a draft revenue requirement for both Power and Transmission (page 17 and 51). The tables summarize the IPR costs, other costs not detailed in the IPR, and capital related costs for the BP-20 rate period and BP-22 initial proposal. All else equal, the percentage change included on these charts can be used to provide some sense of the change in rate necessary to recover Bonneville's costs. Note: To approximate the Power rate increase, assuming all else equal to BP-20, divide the percent change in the draft revenue requirement by 0.8 to account for the fact that 20 percent of Power's revenue requirement is recovered through sources not directly impacted by the level of Bonneville's power rates.

   That said, rate levels for Power are impacted by loads, resources, and other sources of revenue (e.g., secondary revenue) that are not included in these charts which will be changing and updated for the initial proposal. For Transmission, impacts not included in these charts are conversions of products and TSEP studies.

At this time, the studies needed to approximate these values are not yet complete. Further, some of the values will depend on the results of the ongoing discussions in the pre-rate case workshops. Bonneville is still considering whether to provide an early, but incomplete, forecast of rates for Power and Transmission some time during the summer. Providing a sneak-peak of potential rates has a number of drawbacks, including consuming limited staff time producing the estimated rate levels, and causing the pre-rate case process to focus on estimated rate levels (which will change) rather than other important pre-rate case policy and implementation issues. We appreciate, though, that customers may find these estimates useful for their own budgeting purposes. Thus, we have not made a decision yet, and remain open to considering it.

Grid Mod

3. **BPA has indicated that the cost of the EIM desk would be absorbed through staff reduction through attrition. What are the projected staff costs and general headcount of the EIM desk?**

The EIM desk is expected to be staffed by roughly 6 FTE at a total cost of approximately $1.3 million per year.

Transmission

4. **Please provide a breakdown in VCC related IPR costs between TS, PS, and Enterprise. Please also provide the same breakdown for capital and other non-IPR costs to the extent they are available?**

The proposed Vancouver Control Center (VCC) project is a Transmission capital project. If the new Vancouver Control Center project is approved, the estimated capital funding for this IPR period is listed in the table below. Our current projection is to have the VCC planning and approval in FY20 and FY21, building constructed in FY22 - FY24 (Facilities costs in the table below), equipment purchased in FY25 - FY27 (Transmission and IT costs in the table below), fully functional by FY28, and is subject to change based on internal decisions. BPA will continue our outreach to our customers as refinements are made to costs and schedules.

Capital Spending Assumed for VCC Project

$ in Thousands	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Facilities	$ 37,300	$ 74,600	$ 74,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transmission	$ -	$ -	$ -	$ 148,600	$ 144,000	$ 70,000	$ -	$ -	$ -	$ -
IT				$ 5,000						
Total	$ 37,300	$ 74,600	$ 74,600	$ 153,600	$ 144,000	$ 70,000	$ -	$ -	$ -	$ -

Fed Hydro

5. **Fed Hydro Presentation, Slide 13 - What percentage of non-routine expense for Reclamation is for Grand Coulee?**
   For FY18 & 19 Grand Coulee is approximately 86% and 83% respectively of the Reclamation non-routine expense (NREX) budget. Approximately 66% of Reclamation's NREX budget in FY18 and FY19 is attributable to the TPP overhaul.

6. **What factors or investments by the Corps and Bureau will lead to a reduction in non-routine expense, even if this increases routine expense?**
   The capital program is focused on reducing the lost generation risk, roughly analogous to reducing forced outages. Over time investments at facilities made through the capital program should reduce the need for non-routine expense.

   The Corps and Reclamation consider expenses to be non-routine if they are used for the following activities: 1 – major repairs and rehabilitation work that can't be capitalized; 2 – repairs after in-service failures of equipment (stator and rotor windings, blade seals, etc.); and 3 – expense portions of primarily capital projects (e.g., honing a gate servo cylinder so the rings seat better during a turbine replacement).

   There are several factors or investment strategies where the Corps could reduce non-routine expenses, as appropriate. The amount of corrective maintenance that can be accomplished by the operating projects (activity 1 above) is being impacted by inflation and salary increases while in a flat budget environment. These cost pressures will eventually require a reduction in non-routine funding levels in order to provide funding for the routine operation and maintenance (O&M) of equipment. The amount of funding allocated to major repairs and rehabilitation work is elective, with the understanding that the tradeoff is reliability/availability. For this rate case, the Corps has proposed a flat non-routine budget to continue this important work.

   The O&M Optimization Initiative (slide 29 of the Fed Hydro presentation) may reduce non-routine funding to the projects/units where the Corps has determined that more risk or reduced availability is acceptable. Conversely, more routine and/or non-routine funds may be applied to those projects/units where more risk or reduced availability is not acceptable.

   As outlined on slides 18 – 20 Reclamation has taken numerous steps to meet our mission efficiently and effectively. Southern Idaho facilities and Hungry Horse are remotely operated, which reduces labor costs at those facilities as compared to on-site operations. Reclamation utilizes multi-craft personnel at our smaller facilities, optimizing crew size to workload. Grand Coulee restructured maintenance crew composition in the left and right powerhouses, reducing maintenance outage times and increasing overall availability by 15%. Unit optimization was installed at Grand Coulee and it's estimated this will increase efficiency by 1.3%.

World Class Hydro (WCH) at Grand Coulee continues to increase effectiveness. Budget constraints have slowed progress. WCH efforts have improved safety, training, maintenance practices, and unit availability (most notably in the left and right powerhouses as stated above). As funding is available, Grand Coulee will modernize the warehouse and warehousing strategies, improve fleet (vehicles) management, continue to standardize and optimize maintenance policies and procedures, implement computerized maintenance system best practices, and produce maintenance videos. WCH can provide a framework for Grand Coulee to transition from time-based maintenance practices to condition-based maintenance as feasible. Additional funding would allow Grand Coulee to increase focus on these important activities.

Reclamation is committed to implementing Asset Management (AM) best practices. Funding constraints limit the available resources (staff) to dedicate to these efforts. Currently Reclamation is conducting a Demand Analysis to quantify the power and non-power benefits of our facilities, which will feed the development of plant level specific asset plans. Plant specific plans are needed to optimize investment and O&M strategies. Additional funding would accelerate AM efforts and the development of investment and O&M activities based on facility value.

7. **How is the reduction in head count at the Corps and Bureau related to or not related to the increase in non-routine expense?**
The rise in NREX spending at the Corps since 2010 was related to equipment condition and the need to improve operational availability. One component of condition is the age of the equipment, which can lead to an increase in the amount of major repairs, rehabilitations and/or capital investment.

The recent flat budgets in light of inflation and salary increases have resulted in the Corps not backfilling vacant positions, thereby reducing headcount.

Reclamation has not reduced staff in response to budget reductions. Our strategy has been to prioritize non-routine projects within the available funding.

In 2012, Reclamation performed a staffing study at Grand Coulee. The study indicated that Grand Coulee was significantly understaffed. In response to the study findings Reclamation added staffing at Grand Coulee. The additional staffing is focused on routine O&M activities and has contributed to the increased unit availability in both the right and left powerhouses.

It should be noted that due to increased staffing and improved maintenance practices resulting from WCH, Reclamation has improved the condition of generating assets in the left and right powerhouses at Grand Coulee. The improved condition of the assets resulted in deferring investments in G1-18 for approximately 10 years.

8. **Given past inability to execute the $200 million capital plan, what changes are necessary to execute the $300 million capital plan? Will the Corps and the Bureau**

be able to execute the $300 million capital plan or will it likely be the $250 million capital plan and shouldn't BPA plan it that way?

One of the goals of the Asset Investment Excellence Initiative (AIEI) that was kicked off in 2015 was to improve program execution. Given the lengthy project execution windows that are inherent to many of our capital projects, it takes time to realize the effects of making program and process improvements, but many of these improvements have been initiated.

Large upcoming projects at McNary, John Day, Chief Joseph and Grand Coulee are driving the capital forecast to planning levels upwards of $300 million. Once the construction of those projects has begun, the investment levels outlined in the System Asset Plan and the Strategic Asset Management Plan will be more readily achievable.

Historically in the program, there have been many factors that have contributed to underspending of the capital program. These factors include resource constraints, contracting and procurement challenges, poor contractor performance, delays in funding approval, overly optimistic planning, and the cultural shift in the three agency investment planning that came out of the AIEI.

The Corps and Reclamation have taken steps to refine their plant capital plans, especially at the larger plants, by further evaluating the total amount of work planned at each plant respectively. At some plants, this has resulted in reducing or limiting the amount of planned investments to a more achievable level in order to improve execution of the budget and reallocate resources to other valuable capital investments.

9. **Fed Hydro Presentation, Slide 14 - What would non-routine expense look like on this slide if Grand Coulee was included?**

We are still in the process of scoping the G19-21 work at Grand Coulee; at this time, we do not know if the work will be 100% capital, or 100% non-routine expense, or some combination of the two funding streams. We also are in the process of determining the schedule for when we would do this investment. There are simply too many unknowns at this point in the planning process to put any meaningful information in this slide.

10. **Fed Hydro Presentation, Slide 20 and Slide 33 - Is it accurate that when assessing the portfolio of generation assets that lost generation risk is the main factor, but when assessing individual plant investments the hourly value of the change in output from the individual plant weighs against the hourly value of the generated energy and capacity for the individual plant? Please compare the investment tests for individual vs. portfolio.**

Slide 33 shows how capital investment levels closely track lost generation risk (LGR) levels across the fleet of facilities. So we're forecasting that more capital funds will be expended at the facilities with higher LGR. But LGR is certainly not the only factor considered in portfolio prioritization. LGR tends to be a dominant factor, but we also

consider all other potential financial benefits such as O&M cost savings, incremental generation due to efficiency and capacity, and direct cost risk. Additionally, non-financial benefits are considered per the value framework, such as safety, environmental risk, etc. The same basic value framework is considered for individual investments, but the benefit and cost values are refined after preliminary planning.

Energy Northwest

11. **Fed Hydro Presentation, Slide 11 and ENW, Slide 6 - Slide 11 of the Fed Hydro presentation provides a fully loaded cost view of the $/MWH cost with and without BPA allocated costs. Comparing this view to slide 6 of the Energy Northwest generation cost in cents/kWh of the CGS generating cost, would the generation cost be comparable to the under $10/MWH or the $22/MWH. What would the Energy Northwest cost of generation look like if provided in the same fully loaded cost view as Fed Hydro provided?**

    The Columbia Generating Cost of Power (COP) = O&M, CAP, Fuel / Generation $41.50/MWh, is most comparable to the Federal Hydro COP of $22/MWh. However deriving COP figures is complex and involves assumptions and estimates. BPA and EN have not synchronized their methodologies for the production of these figures.

12. **ENW Presentation, Slide 12 and Slide 17 - Please provide the missing forecast amounts to estimate the BP24 cost or benefit of the reduction to BP22 average costs?**

    EN's fiscal year is from July 1 through June 30th. Thus, to convert Columbia's fiscal year costs to BPA's fiscal year costs, EN takes 75% of the first year, 100% of the second year and 25% of the third year. For each of the categories included on EN Presentation Slides 12-14, which are not included on Slide 17, we have calculated the applicable amount for BP24. Thus, the total amount for each category below is the total projected amount for BP24, for that category. As shown on Slides 12-14 and stated during the BP22 IPR, the Capital and Fuel amounts on Slide 17 are not included in the rate case amount only the O&M costs.

    Spares/Inventory Adj
    FY24 = $4,800K – 75% = $3,600K
    FY25 = $6,000K – 100% = $6,000K
    FY26 = $5,000K – 25% = $1,250K
    Total = $10,850K
    Gen Tax
    FY24 = $6,763K – 75% = $5,072K
    FY25 = $8,146K – 100% = $8,146K
    FY26 = $7,744K – 25% = $1,936K
    Total = $15,154K
    Fuel Cash

FY24 = $43,507K – 75% = $32,630K
FY25 = $48,871K – 100% = $48,871K
FY26 = $46,265K – 25% = $11,566K
Total = $93,067K

ISFSI Litigation
FY24 = $185K – 75% = $139K
FY25 = $185K – 100% = $185K
FY26 = $185K – 25% = $46K
Total = $370K

ISFSI Decommissioning Fund
FY24 = $280K – 75% = $210K
FY25 = $295K – 100% = $295K
FY26 = $310K – 25% = $78K
Total = $583K

13. **ENW Presentation, Slide 23 - Please provide the per rate case assumptions for BPA Tier 1 rates used for this comparison.**

We used the $35.56 + 3% escalation starting in FY19.
FY18-19 = $35.56/MWh
FY20-21 = $37.80/MWh
FY22-23 = $38.73/MWh
FY24-25 = $40.03/MWh
FY26-27 = $41.96/MWh

BPA Tier 1 Rate Obtained from:
https://www.bpa.gov/Finance/RateInformation/Pages/Current-Power-Rates.aspx

"Average" Power Rates[1]
Effective October 1, 2019 – September 30, 2021
(FY 2020-2021)
(Updated October 1, 2019)

Rate Category	**Average Rates** ($/MWh[2])
PF-20 Priority Firm	
Public Rate - Average Tier 1 + Tier 2 rate	35.56
Public Rate - Average Tier 1 rate	35.62
Exchange Rate	66.48
IP-20 Industrial Firm	41.11
NR-20 New Resource Firm	79.80

Energy Efficiency

14. **Energy Efficiency Presentation, Slide 12 - Given the statutory requirements for utilities in Washington State to acquire energy efficiency and the fact that the self-funding % is actually close to 35%, in what forum and at what time will BPA consider increasing the self-funding percentage?**

BPA has committed to an ongoing review of our funding assumptions for our energy efficiency program. Per the Post-2011 policy, utility self-funding is reported in aggregate across all utilities. When assessing self-funding levels, BPA considers the overall level of reported conservation, the mix of utilities reporting self-funded efficiency, and our progress toward our energy efficiency goals. Given the results we have seen in recent rate periods, we believe that we have achieved an appropriate balance of self-funding and BPA funding. Should conditions change significantly in the coming rate periods we may reconsider our approach, but there is no formal venue or timeline for that conversation.

15. **Energy Efficiency Presentation, Slide 15 - Given the decline in projected savings, why has Conservation Infrastructure for administering programs not declined?**

Though the overall savings totals have declined, that is largely representative of BPA's shift in focus to savings that provide preferential value to the BPA system, specifically HVAC and weatherization savings. These savings are more challenging and costly to achieve and will require additional support from BPA's regional implementation programs enabled by Conservation Infrastructure funds.

EF&W

16. **Fish and Wildlife Presentation, Slide 11 - Please provide the portion in dollars or % of each line item in this table that is hatchery-related for both the LSRCP and other items? Is any of the LSRCP not hatchery related spending?**

Slide 11 in the Fish and Wildlife Presentation displays the budget (BP-20 Rate Case and BP-22 IPR) and actual spending levels (FY17 – 19) for the Fish and Wildlife Program and the Lower Snake River Compensation Program (LSRCP).

All of the LSRCP funding is hatchery-related. The proposed LSRCP budget for BP-22 IPR is $31 million, which is consistent with its budget for the BP-20 Rate Case. LSRCP hatcheries are different from Bonneville's Fish and Wildlife Program hatcheries. Unlike the Program hatchery facilities, the LSRCP hatcheries were constructed with congressionally appropriated funds. The U. S. Army Corps of Engineers (COE), using appropriated funds, built all of the LSRCP hatcheries and later transferred ownership and operation to the US Fish and Wildlife Services. Congress authorized the LSRCP as part of the Water Resources Development Act of 1976 (90 Stat.2917) to offset fish and wildlife losses caused by construction and operation of the four lower Snake River dams. The 26 LSRCP hatcheries and satellite facilities are operated by Idaho

Department of Fish and Game (IDFG), Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW), USFWS, the Nez Perce Tribe (NPT), Confederated Tribes of the Umatilla River (CTUIR), and Shoshone-Bannock Tribes (SBT). The LSRCP hatcheries and satellite facilities produce and release more than 19 million salmon and steelhead as part of the program's mitigation responsibility. Bonneville directly funds USFWS for the annual operation and maintenance of the LSRCP facilities.

Slide 9 shows FY19 program costs by category and displays 18% of the Fish and Wildlife Program funding allocated to Hatchery Production and Harvest Augmentation accounting for approximately $46.1 million. This funding is in addition to the $31M allocated to LSRCP, and this does not include investments made in Research, Monitoring and Evaluation focused on hatchery production within the Fish and Wildlife Program.

17. **Fish and Wildlife Presentation, Slide 13 - Please provide a range (low to high) of potential % rate impacts from the alternatives in the CRSO EIS?**

Bonneville previously released to stakeholders the potential rate impacts of the operations from the Preferred Alternative proposed in the Draft CRSO EIS. At that time, we estimated that the potential impacts of the proposed Preferred Alternative, all else being equal, was roughly 2 percent of rate pressure relative to BP-20 power rates. This is still Bonneville's best estimate.

Financial Disclosure

This information was initially made publicly available on July 15, 2020, with subsequent updates, and contains information not sourced directly from BPA financial statements.