- Based on previous correspondence from Debbie Carlson, there were part time employees hired to complete records clean up in the past. How much records clean up is remaining? How does this budget entry differ?

OR&R Questions

Spillway 4 Rail Extension – Construction

- How often is spillway maintenance on gate 4 done?

  There several upcoming projects that CFP would benefit from having this gantry crane rail extension: sluice gate replacement/construction (BPA is supportive), sluice gate maintenance, debris management, spillway 4 seismic retrofits, and spillway gate 4 painting. Periodicity of occurrence is on sheet 43 (pg 35) of the alternatives analysis.

- When was the last time maintenance was completed on gate 4?

- Is the design complete?

- What is the current estimate and potential construction schedule?

Additional questions/comments:

- Please update the JS. Current JS (dated October 19 2021) still reads as though we are waiting for the 2021 alternative analysis.
  - Is the design completed?
    - Did the design follow the recommendations laid out in the alternatives analysis? Which sub-alternative was used (upstream bridge retrofit, new downstream bridge, new pier 9 support, new pier 10 support; table 4-1 of alternatives analysis)?
    - Please incorporate updated cost estimate and schedule. Currently, JS indicates total overall costs at $2.568M but the FY23 budget has construction at ~$4.1M. This seems more accurate with FCRPS crane rail replacement (vs extension) costs but is it based on an updated cost estimate?
      - Will construction be able to be completed in FY23?
  - As previously requested, need more information regarding upcoming year projects and overcrowding in the constraints and alternative 3 sections of the JS (i.e. construction would be scheduled outside of flood season).
- Is there a correlation between the “Bridge Sections Inspections & Analysis” budget line entry and the “Spillway 4 Rail Extension” entry?
- This investment was a contested item. Need to develop a mutually agreed upon NPV or cost benefit ratio calculation.

Internal Discussion:

- During JS discussions, CFP/LCPUD indicated the gantry crane rail extension over spillway 4 was intended to be part of the original design but was removed to reduce the original construction costs.
- CFP/LCPUD previously used mobile cranes, but McMillen determined it overloads the deck unless cribbing is used. McMillen did not recommend the alternative to use 300ton mobile crane with cribbing because of overcrowding with the upcoming projects.
    - Another issue with mobile cranes is the hoist reach.
    - Note: CFP indicated that the pier can hold the crane. CFP indicated that deflection is visible while crane is moving. It is unclear if the previous statements were the gantry or mobile crane, but notes seem to indicate mobile.
- CFP indicated that AE firm stated a "beam" would be needed for the roadway since some portions of the deck are only designed for normal "highway loading."
- Part of previous arbitration discussions had this project identified as needing to develop an agreed upon method to calculate NPV. In February 2022, I had discussions with PGA about the potential of in-house calcs which seem doable but effort had been put on pause while CFP was looking into potentially using Copperleaf C55. The alternatives analysis indicated an NPV, but it was only the lifecycle cost avoidance of weeks needing to rent the mobile crane.

Debris Barrier Coating & Cathodic Protection – Construction

- When will you have permit from the Corps? Will this happen this year?

- Do you need permit before starting site prep work?

- Can you provide an updated construction cost and potential schedule?

- Do you need NMFS, WDFW, Tacoma approval for the drawdown? Is it required for timing of work and something that you would ask for during the year of construction?

Correct, my understanding is NMFS, WDFW, and Tacoma Power need to approval prior to drawdown. From JS, CFP had anticipated the following: "CFP to move debris barrier to mooring site in July 2022. Then setting up on bloc[k]s after coordination with fish collection (Tacoma). CFP believes work will be completed through October 2022 (FY23). Report has work scheduled for 110 days. Some of this work does not require the barrier to be out of water/on blocks so CFP plans to have this work completed first. (Please better define type of work and duration [in estimated weeks] that does not need to be completed out of the water)"

Additional questions/comments:

- BPA submitted question June 29th 2022, asking how the $60K will be utilized in FY22.

    - Did the drawdown occur this year?
    - What is the status of the design?
- The costs have increased from $2.55M (on June 29th 2022 JS) to $3.74M FY23 budget.
    - Was this increase based on an updated cost estimate?
    - Is CFP waiting for the design to be completed prior to updating the justification sheet?

Internal Discussion

- Your questions capture my remaining questions.
- Though I am generally supportive of this project, I suggest not approving until the permit is obtained and we are provided updated cost estimates.

Boat Barrier Replacement – Design

- Has Lewis reviewed the security assessment with BPA? As Debbie Carlson describes (note under "Security Improvements" line item), she did partake in the outbrief and overview of the security assessment. I was forwarded the invitation for the CFP Security Assessment Project closeout meeting (last minute), but it was the same day/time as the October Capital Work Group (October 12th 2021). It looks like in the final version of the FY22 budget, both the analysis and design were approved.

Additional questions/comments:

- Please provide an updated JS. Note: An updated JS should have been submitted to BPA after the study was completed and prior to design approval. Did this happen?
    - What were the alternatives? Which alternative was selected for design?

Boat Barrier Replacement – Installation

- Does the '23 scope include procurement and installation?

- What is the current costs for the project to complete?

Additional questions/comments:

- Please provide an updated JS.
    - There has been significant cost growth from $371K to ~$1.96M (428%). During previous JS discussions, BPA had made mention of the concern that the cost estimate was low. Note: Understood the original estimate was a class 5 estimate; it is still almost twice as much as the high range of the thresholds on the JS.
        - Please update the alternatives and cost estimates associated with each on the JS. Please include differing schedules.

- Was the best value alternative selected? As identified in the JS, though "the new design should take into consideration security improvements," it "might not completely address all security concerns." This boat barrier is to be used as a line of demarcation not necessarily impenetrable.
- Additionally, Debbie Carlson was informed by CFP that the design would cost $200K and not all of the design would be complete in FY22 (some to be spent in FY23).
    - What funds have been expended in FY22?
    - What remaining portions of the design will need to be completed in FY23?

Internal Discussion

- Debbie's information (per June 24th 2022 email): "the boat barrier funds have been expended for OY 2022 (design has been included – but it costs $200K); Joe said not all the $200K would be spent in OY 2022 and could be moved out to OY 2023 so they thought about increasing the OY 2022 budget OR defer to OY 2023) (this tells me that the underrun that was mentioned in #1 doesn't make sense)."
- I had originally been more supportive of this project. This is a situation where it does not make sense to approve design until BPA is informed of the alternatives; however, CFP/LCPUD kept proceeding forward with the project without updating the JS.

New Facility - Site Preparation

- Is the county permit required before site prep begins?

- Is the design complete? If not, when will it be complete?

- What is the timing of year that the work needs to be completed in?

- What is the current estimate?

Additional questions/comments:

- The JS needs to be updated.
    - The FY23 project costs are within the Class 5 threshold. However, now that the study has been completed, the JS (June 21 2022 ~$945K) should match the FY23 budget (~$1.15M).
    - Though the recommended alternative is filled out well, the alternatives also need to be filled out to be considered.
    - Did CFP continue forward with the design? BPA should have been part of the discussion regarding alternatives.
- Where is the new location going to be? JS constraints indicate "constraints for the possible location."

- What is the size of the new space?

Internal Discussion:

- This is an item needs to be elevated. Is BPA supportive of an investment such as this? Do we "have" to fund this? This seems like low cost estimate for a new facility with site preparation work so we may be approving a project that balloons in cost. Note: This is considered a safety issue to CFP/LCPUD but the need is also due to increased staffing.
- Background: When BPA sent the FY22 Budget memo there was no JS sheet, so this investment was considered still being worked. BPA received a JS December 2021, but at that point BPA was informed CFP/LCPUD was not supportive of the FY22 budget CFP and BPA had been working on.
- I agree with your questions especially regarding the permits.
- I do not think BPA should approve of the project construction until we understand the alternatives considered and the path forward.
    - Alternatives could still be "needs" versus "wants" (i.e. size, amenities, conference rooms) in a new facility; not just temporary offices (which is another alternative).

Sluice Gate Replacement - Design 2

- Is the study complete and has it been discussed with BPA?

- What is the current design estimate?

Additional questions/comments:

- The JS needs to be updated.
    - Cost estimate in the FY23 budget does not match the JS.
        - Is the FY23 budget costs based on an updated cost estimate? Note: BPA asked that CFP use the current cost estimates so there is a note on the JS that indicates CFP believes this project will be closer to $10M. There should be a cost estimate to support the budget costs.
    - Cost estimates and schedules for all alternatives should be updated.
- What is the current status of the project? Based on the schedule from June 21st 2022, JS indicates that the design will not be completed until March 2023. Is this correct?

Internal Discussion

- In general, BPA is supportive of this project to support CFP's mission. The most current information should be reflected in the JS though.

- This is an instance of project schedule not lining up with budget cycle. BPA is being asked to approve design before new cost estimate and study is completed.

5-Ton Bridge Crane

- What are current cost estimates?

- Can this work be completed over a two year period?

- What is the tentative schedule for procurement and installation?

Additional questions/comments:

- This project was a contested item.
- Please provide an updated JS.
  - During previous JS discussions, BPA had expressed concern that the cost estimate was low. Since the JS process had been created, there has been significant cost growth from $500K to ~$1.367M (including prior actuals; 173%).
    - It seems the cost identified on the FY23 budget ($1.355M) and June 2022 JS ($650K) do not match. Please update JS and ensure correct FY22 amounts as well.
    - Why did the costs increase significantly?
  - BPA had requested information on how CFP determine the 5 ton loading capacity. Please include this information on the JS (i.e. largest component/equipment weight removed during maintenance).
  - Can installation be completed over one year?
- This investment was a contested item. Need to develop a mutually agreed upon NPV or cost benefit ratio calculation.

Internal Discussion:

- Costs and scope of work discussions and development for this project have been going on for quite some time (FY17 with $200K price tag). When I first came onboard for FY21 budget development, we were only given a "detailed sheet" which had a minimal scope of work information, $500K price, and misc project information. I did not think 2ea bridge cranes (even if only 5 ton) could be able to be installed for less ~$500K but was informed this was a quote. The Justification sheet process was created for the FY21 budget and the project cost was $509K. This project was not approved for FY21 budget because BPA was informed the quote was from several years prior and we had some scoping concerns (lifting capacity decision and clearance concerns). In FY22, CFP informed BPA that another quote was obtained with overall project cost at $650K. Later in the FY22 budget development, they lowered the FY22 request to $638K since some funding had already been

completed for design (FY17-21). Now we are seeing ~173% increase (from $500K), or 583% increase from the original $200K.

- Agreed the JS needs to be updated, but JS was just "updated" June 2022.
- BPA still needs information on how they determined 5 ton load capacity was sufficient for each crane. Had previously asked for breakdown of component weights for equipment being removed during intended CFP/LCPUD maintenance.

Trash Removal System – Design

- Has BPA reviewed the study results and alternative?

- It appears that the Justification Sheet has not been updated for a while. What are the current estimates for design?

Additional questions/comments:

- Please update the JS with the most up to date information.
  - Is CFP waiting to the study/assessment to be completed prior to updating the JS?
  - If not, please include any alternatives you have been informed of. Currently, the JS states "alternatives will be added after study."

Internal Information:

- BPA had suggested to CFP to combine several debris management projects into one assessment (Trash Removal System, Trash Rake, and boom/boat barrier). However, CFP decided to keep as three separate projects and indicated they would ensure continutity between AE and CFP for trash removal projects.
- This is an instance of project schedule not lining up with budget cycle. BPA is being asked to approve design before new cost estimate and study is completed.

Transmission Line Access - Bridge Replacement

- Do you have a justification sheet for this? Searched LCPUD folder and didn't find it.

Additional questions/comments:

- Please provide a new/original justification sheet since project is estimated at $275K.
- New access? Who owns the towers?

Internal Information: I have no insight on this project because this is new.

Draft (Please do not send with orange text)

Generator Hatch Cover Seals & Drains

- Have the seals been procured?

- What is the current estimate and schedule for completion?

Internal Information: As long as the cost estimate has not increased, I am supportive of this project. BPA has been supportive of this project since at least the FY21 budget.

Trash Rake Design

- What is the current estimate for design?

- What is the current schedule for design?

Additional questions/comments:

- Please update the JS with the most up to date information.
  - Per the JS, the new study should have been completed in July 2022. Please update the project costs and schedule to reflect.
  - Please include the alternatives evaluated in the alternatives analysis. Currently, the JS states "alternatives will be added after study."
  - Since HydroAMP score is still considered high, please provide context in the "additional information" section of the JS.

Internal Information:

- BPA had suggested to CFP to combine several debris management projects into one assessment (Trash Removal System, Trash Rake, and boom/boat barrier). However, CFP decided to keep as three separate projects and indicated they would ensure continutity between AE and CFP for trash removal projects.

Campground & Day Use Park Paving

- Can you provide pictures of the pavement showing conditions?

- When was it last paved?

Additional questions/comments:

- Please provide a new/original justification sheet since project is estimated at $150K.

Internal Information: I have no insight on this project because this is new.

Draft (Please do not send with orange text)

Generator Protective Relay Replacement – Design

- Do you have a justification sheet for this? Searched LCPUD folder and didn't find it.

- What is prompting the relay replacement?

- Are you having issues with the current system or obtaining spare parts?

Additional questions/comments:

- BPA needs additional details on the scope of work.
  - The overall project cost is currently estimated at $150K and will need a JS. Please provide some information on what this work entails.
- Please describe the current need for this project? Why does this work need to start now? Failures?

RT Fork Lift

Questions/comments:

- This budget line item was removed in the FY21 budget because CFP indicated the current equipment was still satisfactory. Has there been substantial degradation in the past year or two?
- What are the specs of this fork lift?

Internal Discussion: This line item was originally in the FY21 budget but removed by CFP because their current equipment was still satisfactory. I still question if this cost is based on specifications and estimate. I have worked with USACE NWS (in past) to buy lightly used equipment and it was a fraction of the price allotted here.

Battery Chargers/Battery Bank Replacement

- How old are the current chargers and batteries?

- Are you experiencing any issues with them or have done any condition based analysis?

Additional questions/comments:

- Since these two budget line items are related, BPA needs additional details on the scope of work.
  - The overall project cost is currently estimated at $140K and will need a JS. Please provide some information on what this work entails.
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new. Technically, this should have a JS since it is over the $100K threshold.

Draft (Please do not send with orange text)

Security Improvements

- Are these based on an assessment?

Additional questions/comments:

- Since this work is ongoing for several years, please provide more information as to what work will be accomplished.
  - CFP should consider one contract to complete security assessment deficiencies.
- What will the $50K be used for?
- Please describe the current need for this project? Why does this work need to start now?
  - Any significant security compliance issues?

Internal Information: I agree that some security improvements are likely necessary, but it seems like it would be more efficient and in BPA's best interest to have a larger scoped project with deliverables and milestones rather than setting aside $50-80K every year.

- A security assessment was completed but CFP (understandably) did not want to send to BPA.
- From FY22 budget cycle discussions – The security assessment indicated several risks and suggestions for improvement: electric vehicle gate, more cameras, motion detectors, intrusion alert, fencing - (physical security).
  - These types of upgrades are be expected (need for security improvements across the FCRPS).
  - Also, expected that BPA cannot obtain copy of report (security concerns).
  - There should be scope for what the $50K will be used for? CFP should be able to present some of the projects this funding would go towards.
- Debbie's notes - "the $50K is going to be based on the security assessment and its results (maybe alternate site #2 because that is by the dam gate is unlocked during day no camera). Joe has indicated he will remove camera's from the CCC take out site (camera's could be used elsewhere). Note: I sat in on the outbrief on the Security Assessment on October 12 - most had to do with fencing, lighting, creating documents, what could/should be done concerning access (security assessment is considered CCIS and will not be shared with BPA - but it can be read at Lewis office)"

Drainage Gallery Air Supply - Alternative Analysis

- Is the current air supply system not operating?

- Is this project a life safety or for maintenance support?

Additional questions/comments:

- Please provide a new/original justification sheet.
  - This project appears to be scheduled for the next three years: FY23 alternatives analysis, FY24 design, and FY25 construction.
  - The overall project cost is currently estimated at $655K and will need a JS.
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new.

Elevator Controls – Design

- Are there issues with the current design?

- Do you have to maintain state certification?

Additional questions/comments:

- Please provide a new/original justification sheet.
  - This project appears to be scheduled for the next two years: FY23 design and FY24 installation.
  - The overall project cost is currently estimated at $185K and will need a JS.
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new in budget.

Campground A Loop Restroom – Design

- How bad is the current restroom?

- Are there any features that are inoperable?

Additional questions/comments:

- Please provide a new/original justification sheet.
  - This project appears to be scheduled for the next two years: FY23 design and FY24 installation.
  - The overall project cost is currently estimated at $320K and will need a JS.
    - This project was in the FY22 budget 2022-2028 for $175K. Was the cost increase based on a cost estimate?
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new.

Draft (Please do not send with orange text)

HVAC AH-1 Replacement Office Area

- Is the current HVAC operating? To my knowledge, yes the HVAC system is working.

- What are the issues with the HVAC?

- is this a replacement or a betterment? Could be expense.

Additional questions/comments:

- Please provide additional information on scope.
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new. The other line item for HVAC is to replace filters, valves, fan motors, etc.

Spillway Gate Control - Alternative Analysis

- What are the issues with the current control system?

- What is the design and construction rough schedule?

Additional questions/comments:

- Please provide a new/original justification sheet.
  - This project appears to be scheduled for the next three years: FY23 alternatives analysis, FY24 design, and FY25 construction.
    - Thank you for breaking this project out like this.
  - The overall project cost is currently estimated at $325K and will need a JS.
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new.

Unit Instrumentation - Alternative Analysis

- What is this project for?

Additional questions/comments:

- Please provide a new/original justification sheet.
  - This project appears to be scheduled for the next three years: FY23 alternatives analysis, FY24 design, and FY25 construction.
  - The overall project cost is currently estimated at $290K and will need a JS.
- Please describe the current need for this project? Why does this work need to start now?

Internal Information: I have no insight on this project because this is new.

Draft (Please do not send with orange text)

Unit Turbine Gage Board Inputs into SCADA – Installation

- Were these recently added?

Additional questions/comments:

- Is this work being contracted out? What about the SCADA support?
  - Could all of the new inputs into SCADA be completed under the same task order?
- Is there a need for a design portion similar to "Station Service Cabinet Inputs" budget entry?
- Where did the cost estimate come from?

Elevator Roof Access – Installation

- Is there no current roof access?

Additional questions/comments:

- Has the design been completed? If not, will it be completed in FY22?
- What is the current cost?
- Any additional information/updated cost estimate on what the installation will cost?

Internal Discussions: This appears to be a new budget line item.

- Based on previous budget discussions, the only access to the roof is for CFP personnel to climb a 30+ foot ladder (extension) to access communication antennas (radios, etc), weather station, and cameras. CFP is looking at installing a ladder which is attached to the structure and has a cage around it to increase safety. CFP staff need access this equipment with tools and materials more frequently now.
- In the past, we asked CFP about doing this work in-house. CFP will need to hire an outside contractor to do all the work necessary with this project because it could require a stamped structural engineer drawing.
  SIDE NOTE: will the new accounting system be able to tell how much was spent to do work (as it progresses and a final total)

Major Office & Network Equipment

- Is this work expense?

- What is the scope and why is it necessary?

Additional questions/comments:

- Is this only procurement?
- Why does CFP need $25K per year for major office and network equipment?

Internal Discussions: This appears to be a new budget line item.

Roadway Gates

- Are these new gates or replacing existing ones?

- If new gates, is it based on a security assessment?

Additional questions/comments:

- What does this consist of/scope? How many gates were/are being replaced in FY22? How many gates will be replaced in FY23.
- Costs increased from FY22 budget planning: was FY22 $12K and FY23 $14K, now FY23 $18K. Were the gates slightly more expensive than anticipated?

Internal Information: CFP is replacing old “farm style” road gates.

Service Water VFD & Controls Replacement

- What does the service water feed?

- Are there alternative sources?

Additional questions/comments:

- What does this consist of/scope?

Downstream Notification Siren – Design

- Is there a downstream notification siren now? If so, does it work?

Additional questions/comments:

- Did CFP look into the FERC Inspection and Part 12 report to see how the item was worded? I have that as a CFP action item.

Internal Information: Based on previous discussions with CFP, yes, there is a current system and it works. Current siren will alert river users that there is an upcoming rise in water elevation. However, it does not work at the 108 bridge (fishing bridge 3 miles downstream of CFP) and FERC mentioned this in the FERC Part 12. FERC is concerned about not being able to notify fishermen/women and swimmers. It has been considered a safety issue. LCPUD believes this is a minimal cost to keep people safe.

Day Use Park Flat Water Kayak Take Out

- Why is this urgent and a priority?

- Are there other areas to take a Kayak out?

Additional questions/comments:

- What does this consist of/scope?
- How does this correlate to the work for the take out site improvements?

Station Service Cabinet Inputs Into SCADA – Design

- What are the general scope of inputs? Are they related to other newly installed or planned to install devices?

Additional questions/comments:

- Is this work being contracted out? What about the SCADA support?
  - Could all of the new inputs into SCADA be completed under the same task order?
- Where did the cost estimate come from?

Copper Canyon Creek Take Out (FY22 Budget)

- What is status of this project?

2022 CFP Budget Categories		Budget Year 2022
O&M	$	3,121,025
Wage, Benefits, & Taxes	$	114,905
Transmission	$	63,000
Training & Travel	$	191,850
Taxes	$	65,100
Recreation	$	416,800
Operations	$	291,040
Maintenance	$	1,767,950
Fish & Wildlife	$	210,380
OR&R	$	4,004,670
Recreation	$	1,600,000
Operations	$	75,400
Maintenance	$	2,292,270
Fleet	$	37,000
Fish & Wildlife	$	-
Special O&M	$	4,270,400
Wage, Benefits, & Taxes	$	3,202,900
Training & Travel	$	23,800
Operations	$	39,000
General	$	1,004,700
Grand Total	$	11,396,095

2022 CFP Budget Categories		Budget Year 2022
O&M	**$**	**3,121,025**
Wage, Benefits, & Taxes	**$**	**114,905**
OT TAXES	$	4,100
Social Security Medicare	$	110,805
Transmission	**$**	**63,000**
ROW Maintenance	$	60,000
Transmission Line Corridor Planting	$	3,000
Training & Travel	**$**	**191,850**
American Fisheries Society Meeting	$	1,500
American Governor Analog Gov Training	$	7,000
ASDSO Conference	$	2,500
AVO Electrical Series	$	4,350
CEATI - ANNUAL MEETING	$	3,000
CEATI - DSIG MEETING	$	2,200
CEATI - HPLIG MEETING	$	2,800
EPTC Fundamentals of Electricity	$	7,200
EPTC Generation Series	$	3,600
EPTC System Operations Personal Grounding	$	1,260
EPTC Transmission Series	$	3,600
HSI Online Training	$	800
HydroVision	$	3,000
NW Hydro Forum	$	800
NWHA - ANNUAL MEETING	$	800
NWHA - WORKSHOP	$	500
NWPPA - LEADERSHIP TRAINING	$	3,400
OPERATOR TRAINING DEVELOPMENT 2022	$	130,000
TPC - ELECTRICAL WORKSHOP	$	4,350
TPC - MECHANICAL FUNDAMENTALS AND TROUBLESHOOTING	$	2,390
TRAINING - PESTICIDE APPLICATION	$	1,600
TRAINING - WATER & WASTEWATER	$	1,200
Wildlife Classes	$	4,000
Taxes	**$**	**65,100**
County Taxes	$	700
Ecology Water Tax	$	7,500
Privilege Tax	$	56,900
Recreation	**$**	**416,800**
Advertising	$	3,000
Boat Launch Sediment Removal	$	5,000
Building Maintenance	$	3,200

2022 CFP Budget Categories		Budget Year 2022
Campground Fire Pits Graveling	$	500
Campground Hosts	$	120,000
Campground Internet	$	3,000
Campground Reservation Software	$	5,000
Campground Restroom Improvements	$	30,000
Campground Telephone	$	1,300
Campground Wood Chips	$	500
Contract Septic and Water Services	$	27,000
Contract Services (Dock Installation and Removal)	$	2,500
D-Loop Electrical Design & Feed Replacements	$	30,000
Electric Utilities	$	6,400
EQUIPMENT REPAIRS - PARK	$	3,200
GARBAGE SERVICE - RECREATION	$	6,400
MAINTENANCE - GROUND	$	3,200
MAINTENANCE - SEWER & WATER SYSTEM	$	6,400
Noxious Weed Control	$	5,000
Operation Supplies	$	2,200
Port Blakely Road Access Agreement	$	30,000
Port Blakely Road Maintenance	$	13,500
Portable Restrooms	$	2,300
Potable Water and Septic System Testing	$	2,000
Recreation Assessment	$	90,000
Repairs & Supplies	$	10,000
Sign Replacements	$	2,200
Tools & Equipment - Recreation	$	3,000
Operations	**$**	**291,040**
1D Sediment Transport Study	$	100,000
CF Project Telephones	$	7,000
CF Vehicle Verizon Connect	$	540
CFP Cell Phones	$	1,600
COMMUNICATIONS - RADIOS, ETC	$	7,900
Communications Fiber - User Fee	$	48,500
Dam Safety Consultant	$	62,000
Electric Utilities - Secondary Power Feed	$	11,500
Fall Protection Equipment	$	6,000
FERC Dam Movement Survey	$	8,400
FR Clothing	$	9,500
GARBAGE SERVICE - OPERATIONS	$	2,400
Operator Remote SCADA Communications	$	8,000

2022 CFP Budget Categories		Budget Year 2022
Rope Access Gear	$	3,000
Security/Plant Locks	$	300
Sedimentation Survey	$	5,200
Shelving & Furniture	$	7,000
Subscriptions, Prints, Copies and Maps	$	2,200
Maintenance	**$**	**1,767,950**
ARC FLASH STUDY	$	35,000
Automatic Transfer Switch Grouting	$	1,000
Buffer Zone Management	$	3,200
CAD Software Licensing	$	4,500
Computer Software	$	2,000
Construction Management Software	$	12,000
Contract Crane Inspections	$	12,600
Contract Diesel Generator Maintenance	$	10,000
Contract Drafting Services	$	50,000
Contract Maintenance Elevator	$	15,200
Control Room / Office Area Repairs - Construction	$	586,030
Control Room / Office Area Repairs - Design	$	7,500
Control Room Paperless Recoders	$	42,000
Dam Instrumentation	$	2,200
Debris Removal - Trash Rake Debris Box	$	6,000
Diesel Generator Connection to Spillway Gates 2 & 3	$	14,000
Diesel Generator Load Bank	$	8,500
Diving Services	$	16,500
Drainage Pump Handrail	$	2,500
Drainage System	$	3,000
Electrical Parts	$	5,400
Equipment Rental	$	17,000
Governor	$	4,000
GSU Transformer #1 Metering CT Replacement	$	15,000
GSU Transformer Maintenance	$	3,240
GSU Transformer Oil Processing & Testing	$	165,780
HVAC	$	3,200
Instrumentation Parts	$	5,400
Investigate Draft Tube Liner Issues	$	25,000
MAINTENANCE - LOG BRONC	$	1,000
Maintenance Management System	$	15,000
Maintenance Supplies for Electric Plant	$	5,400
Mechanical & Piping	$	9,000

2022 CFP Budget Categories		Budget Year 2022
Mechanical Parts	$	10,600
Metal	$	10,000
North Rock Wall Scaling	$	75,000
Painting & Special Coatings	$	3,200
Piezometer Pressure Transmitters	$	18,000
Plant Lighting	$	1,000
Plant Water Wells & Testing	$	1,200
Recoat Top Deck Above Control Room	$	3,500
Repaint Elevator Shaft Exterior	$	1,500
Repaint Stairwell Interior	$	500
Rotor Braided Jumpers	$	10,000
Safety Equipment - Non PPE	$	5,000
Sandblast and Coat Draft Tube Platform Brackets	$	3,000
SCADA Network Support	$	10,700
SCADA Support	$	120,000
Seismic Study	$	150,000
Service Air Compressor	$	1,000
Service Water System Design	$	2,500
SMAG Power Connection & Cable	$	4,500
Smoke Detectors & Fire Water Systems	$	2,600
Spillway Gates	$	5,000
Temporary Offices	$	-
Tools & Equipment - Operations	$	15,000
Trunnion Friction Testing	$	65,000
Turbidity Sensor Communication	$	1,000
Turbine Shaft Seals	$	30,000
Unit Control Board Meter Replacement	$	42,000
Unit Turbine Gage Board Inputs into SCADA - Design	$	4,000
Warehouse Repairs	$	64,000
Fish & Wildlife	**$**	**210,380**
Creel Study	$	18,000
Fish & Wildlife Contract Services (RTL Consulting)	$	10,000
Fish Gate Position Indicators	$	32,000
Fishing Pond Sediment Removal	$	30,000
Habitat & Fish Recovery Services (WDFW)	$	10,000
Habitat Management; Fertilizer, Spraying, Plants	$	9,000
Kid's Trout Derby	$	5,400
Mitigation Trout Program	$	45,000
Noxious Weed Control Contractor	$	9,300

2022 CFP Budget Categories		Budget Year 2022
USGS Gauging Station Fees	$	41,600
Wildlife Society Membership	$	80
OR&R	**$**	**4,004,670**
Recreation	**$**	**1,600,000**
Copper Canyon Take Out Site Improvements	$	1,600,000
Operations	**$**	**75,400**
Security Improvements	$	50,000
Server/Cameras/Office Machines/Computers	$	25,400
Maintenance	**$**	**2,292,270**
5-Ton Bridge Crane	$	490,000
Boat Barrier Replacement - Alternative Analysis	$	35,000
Boat Barrier Replacement - Alternative Design	$	41,375
Debris Barrier Coating & Cathodic Protection - Design	$	60,000
Elevator Roof Access - Design	$	10,000
Exciter Brush Dust Vacuum System	$	92,200
Generator Hatch Cover Seals & Drains	$	25,000
Lathe	$	18,000
Mobile Diesel Generator & Log Bronc Cover	$	25,000
New Facility - Site Preparation	$	60,000
Revenue Meters	$	24,000
Roadway Gates	$	12,000
Roadway Lighting	$	20,000
Sluice Gate Replacement - CFD & Physical Model Design	$	115,605
Sluice Gate Replacement - Design 1	$	372,000
Sonar & Turbidity Sensors	$	25,000
South Downstream Abutment Wall Handrail	$	27,000
Spillway 4 Rail Extension - Design	$	330,025
Spillway Gate Hoist Covers - Construction	$	95,000
Spillway Gate Hoist Covers - Design	$	25,000
Spillway Handrail & Guardrail	$	226,585
Trash Rake - Alternative Analysis	$	86,850
Trash Removal System - Alternative Analysis	$	76,630
Fleet	**$**	**37,000**
Mower	$	22,000
Vehicle	$	15,000
Fish & Wildlife	**$**	**-**
Wildlife Mitigation Land	$	-
Special O&M	**$**	**4,270,400**
Wage, Benefits, & Taxes	**$**	**3,202,900**

2022 CFP Budget Categories		Budget Year 2022
Employee Medical Insurance	$	394,460
Employer PERS	$	138,930
ES Support Overhead	$	400,300
ES Support Overhead - IS/IT	$	11,475
ES Support Overhead - Purchasing	$	13,000
ES Support Wages	$	572,740
ES Support Wages - IS/IT	$	16,430
ES Support Wages - Purchasing	$	18,610
Flu Shot Clinics	$	400
L&I - Employer	$	19,335
Long Term Disability	$	3,595
Misc Pension & Benefits, CDL, Medical Exam, etc	$	5,025
OT BENEFITS	$	8,900
OT WAGES	$	53,400
Paid Family Leave Benefit	$	2,575
PCORI ACA Requirement	$	100
PL Cash Out	$	15,000
Retiree/COBRA Med Ins - Premiums & Claims	$	20,000
Short Term Disability	$	2,025
Standby Pay	$	38,300
Term Insurance Benefit	$	1,265
VEBA Benefit	$	13,550
VEBA Cash Out	$	5,000
Wages	$	1,448,485
Training & Travel	**$**	**23,800**
NWPPA - ADMIN ASST TRAINING	$	2,400
TRAINING - COMPUTER	$	800
TRAINING - FALL PROTECTION	$	8,000
TRAINING - ROPE ACCESS	$	8,000
WPUDA - ADMIN ROUNDTABLE	$	600
WPUDA/APPA/NWPPA - ACCOUNTANT TRAINING	$	4,000
Operations	**$**	**39,000**
CF Vehicle and Equipment Fuel	$	16,000
CF Vehicle Maintenance	$	12,000
CONSUMABLE SUPPLIES - FIRST AID	$	3,200
CONSUMABLE SUPPLIES - JANITORIAL	$	1,300
CONSUMABLE SUPPLIES - SAFETY & PPE	$	6,500
General	**$**	**1,004,700**
A&G Exhibit F	$	371,600

2022 CFP Budget Categories		Budget Year 2022
Auditing - Accountability	$	2,300
Auditing - Financial	$	19,000
Budget Facilitator	$	-
CEATI - MEMBERSHIP	$	65,300
CEATI - PROJECTS	$	30,000
Compliance Consultant	$	65,000
FERC Annual Fee	$	100,000
Fire District Payment	$	19,500
INSURANCE - CYBER/CRIME/PUBLIC OFFICIALS	$	7,200
INSURANCE - EXCESS LIABILITY	$	25,000
INSURANCE - LIABILITY	$	10,500
INSURANCE - PROPERTY	$	200,000
LEGAL SERVICES - BIOP & FERC ISSUES	$	24,200
LEGAL SERVICES - GENERAL ISSUES	$	20,000
Long Range Plan Analysis	$	35,000
NWHA Membership	$	800
OFFICE SUPPLIES AND EXPENSES	$	9,300
Grand Total	**$**	**11,396,095**

2022 CFP Budget Summary		Budget Year 2022
Fish & Wildlife	**$**	**210,380**
Fleet	**$**	**37,000**
General	**$**	**1,004,700**
Maintenance	**$**	**4,060,220**
Operations	**$**	**405,440**
Recreation	**$**	**2,016,800**
Taxes	**$**	**65,100**
Training & Travel	**$**	**215,650**
Transmission	**$**	**63,000**
Wage, Benefits, & Taxes	**$**	**3,317,805**
Wheeling	**$**	**-**
Project Reimbursement	**$**	**(11,297,095)**
REV	**$**	**(11,297,095)**
BPA Project Reimbursement	$	(10,596,580)
BPA Project Reimbursement - 2021 Carry Over	$	(700,515)
BPA Project Reimbursement - Contingent	$	-
Project Revenue	**$**	**(99,000)**
REV	**$**	**(99,000)**
Campground Revenue (Net of Service Fees)	$	(95,000)
Interest Income	$	(4,000)
Grand Total	**$**	**-**

BPA 2022 Budget Reimbursement Schedule

	2022 Budget	
January-22	$	883,048
February-22	$	883,048
March-22	$	883,048
April-22	$	883,048
May-22	$	883,048
June-22	$	883,048
July-22	$	883,048
August-22	$	883,048
September-22	$	883,048
October-22	$	883,048
November-22	$	883,048
December-22	$	883,052

Total Scheduled Payments	$	10,596,580

Operating Working Capital	$	350,500
Days Cash On Hand (DCOH)	$	12

From: Todd,Wayne A (BPA) - PGA-6
Sent: Wed May 19 13:42:20 2021
To: Smith,Glen A (BPA) - PG-5
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND
Subject: Cowlitz Cost of Power
Importance: Normal
Attachments: image001.png; image002.png; 3 year Cost of Generation summary.xlsx

Microsoft Exchange Server;converted from html;
Glen - This came up in a discussion about cost of power at CGS, but I found the COP numbers for Cowlitz Falls interesting as I think benchmarking type numbers Drew or Gordon had worked up a year or so ago were much lower; my recollection was in the $20-30/MWh range. These numbers in the mid-forties are based on budgets no greater than $5M a year, so I can only imagine how expensive CFP will be with budgets in the $10M range.
Kyle Hardy created this, so we may be able to get the methodology from him and create some forward looking numbers based on Cowlitz's five year budget plan, although I'm not going so far as proposing we do that now, but perhaps keep in our back pocket to either support an ADF or inform future budget discussions.
Thanks,
Wayne
From: Ashby,Gordon S (BPA) - PGA-6 <gsashby@bpa.gov>
Sent: Wednesday, May 19, 2021 7:15 AM
To: Fisher,Daniel H (BPA) - PSR-6 <dhfisher@bpa.gov>; Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>
Subject: RE: [EXTERNAL] Re: Cost Graphics - BPA
Hi Daniel,
Here is the table that finance produces. The cost of generation for CGS averaged $49.38/MWh and the fully loaded cost (with BPA overheads) averaged $57.00/MWh. At this point we don't have approval from the Corps and Reclamation to release the individual plant numbers, so consider this background information and just forward on the CGS numbers.
Gordon
From: Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov>
Sent: Wednesday, May 19, 2021 7:00 AM
To: Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>; Ashby,Gordon S (BPA) - PGA-6 < gsashby@bpa.gov>
Subject: FW: [EXTERNAL] Re: Cost Graphics - BPA
Do we have CGS in $/MWh?

Daniel
From: John Saven (b) (6)
Sent: Tuesday, May 18, 2021 4:14 PM
To: Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov>
Subject: [EXTERNAL] Re: Cost Graphics - BPA
Thanks Daniel. Good to hear from you. I hope all is well. These materials are helpful. I am going to participate as a Board member in arbitration for Energy Northwest with the IBEW and want to make the case that ENW is very constrained in what we can do regarding salaries. In simple terms I would like to show that the average cost of energy that ENW produces compared to the average cost of

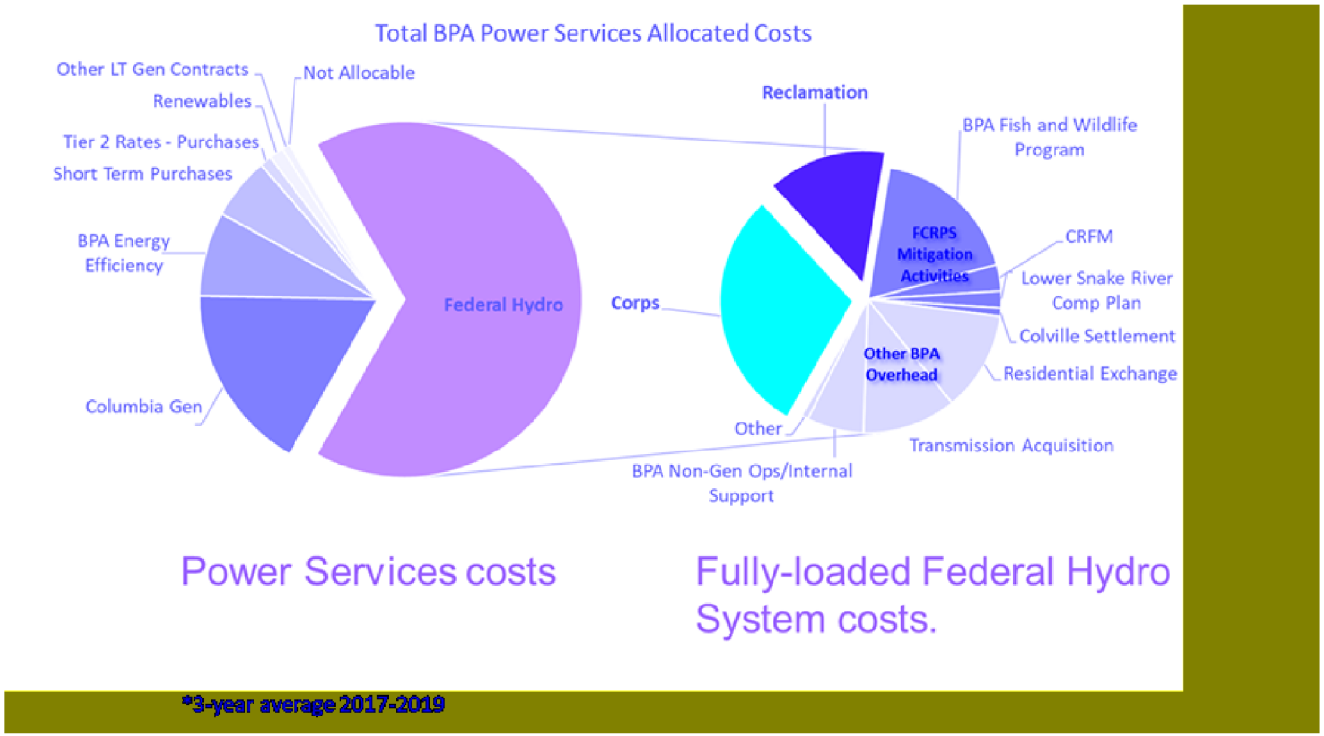
FCRPS resources is much higher. Given that dynamic, and the business relationship between BPA and ENW, particularly with 2028 contracts coming up and BPA with excess resources, we can't just open the piggy bank. If you have anything that links volume of power supply and cost between CGS and FCRPS that would be very helpful. If not I can work with this. Best regards. John

On Tue, May 18, 2021 at 2:34 PM Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov> wrote:

> Hi John, long time no see. Hope all is well with you.
>
> I hear you are looking for cost information. I've included two graphics that may help, but you may be after something different.
>
> Helpful?
>
> Daniel

Table 8.3.6-1 – 3-year Average Cost of Power Metrics (FY17-FY19)

Resource	Cost of Generation ($/MWh)	Fully Loaded Cost $/MWh
Main Stem Columbia	7.52	18.19
Lower Snake	9.86	26.85
Headwater	12.49	23.06
Area Support	23.41	40.08
Local Support	29.56	40.11
FCRPS Hydro	**8.89**	**20.51**


Total BPA Power Services Allocated Costs
Other LT Gen Contracts
Not Allocable
Renewables
Tier 2 Rates - Purchases
Short Term Purchases
BPA Energy Efficiency
Columbia Gen
Federal Hydro
Power Services costs
Reclamation
BPA Fish and Wildlife Program
FCRPS Mitigation Activities
CRFM
Lower Snake River Comp Plan
Colville Settlement
Residential Exchange
Transmission Acquisition
Other BPA Overhead
Other
BPA Non-Gen Ops/Internal Support
Corps
Fully-loaded Federal Hydro System costs.
*3-year average 2017-2019

From: Carlson,Debbie (BPA) - PGAC-RICHLAND
Sent: Thu Jun 03 08:47:35 2021
To: Smith,Glen A (BPA) - PG-5
Subject: Cowlitz Falls Project (CFP)
Importance: Normal
Attachments: [EXTERNAL] RE: **EXTERNAL EMAIL** cost of power

Microsoft Exchange Server;converted from html;

Hi Glen:

I am reviewing the ADF for the CFP. I do not know if the attached document would be of any value/use but wanted to pass it on to you.

debbie

From: Brad Ford

Sent: Fri May 28 16:49:17 2021

To: Carlson,Debbie (BPA) - PGAC-RICHLAND

Subject: [EXTERNAL] RE: **EXTERNAL EMAIL** cost of power

Importance: Normal

Attachments: CFP Cost per KWH.xlsx

Hi Debbie,

Please see attached – sorry for the delay.

Have a great holiday weekend!

Brad

From: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>
Sent: Tuesday, May 4, 2021 2:38 PM
To: Brad Ford <bradf@lcpud.org>
Subject: **EXTERNAL EMAIL** cost of power

CAUTION! This email originated from outside the organization please do not click links or open attachments unless you recognize the sender and know the content is safe!

Hi Brad –

First NO HURRY (maybe by the end of next week) – can I get an updated cost of power sheet from you?

Thanks much!

debbie

Brad Ford
Chief Financial Officer | Lewis County PUD | www.lcpud.org
o:(360) 748-9261 | d:(360) 740-2417 | e:bradf@lcpud.org
321 NW Pacific Ave | PO Box 330 | Chehalis, WA 98532-0330

From: Todd,Wayne A (BPA) - PGA-6
Sent: Mon May 03 09:54:33 2021
To: Smith,Glen A (BPA) - PG-5
Subject: FW: Cowlitz Falls Project back ground
Importance: Normal
Attachments: Overview Cowlitz Falls Dam; Power Purchase Agreement DE-MS79-91BP93212.pdf; Cowlitz Falls Master Plan Benchmarking Report-4-23-2020.pdf

Microsoft Exchange Server;converted from html;
Glen – the message attached has some detail about the project. The rest is probably more information than you need for now.
Thanks,
Wayne
From: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>
Sent: Friday, May 8, 2020 11:14 AM
To: Wellner,Michael T (BPA) - TEPL-TPP-1 <mtwellner@bpa.gov>
Cc: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>; Johnson,Kimberly O (BPA) - PGAF-6 <kojohnson@bpa.gov>; Todd,Wayne A (BPA) - PGA-6 <watodd@bpa.gov>
Subject: Cowlitz Falls Project back ground
Hi Michael,
My name is Cherie and I work in Richland, WA for Wayne in the PGAC group. Within PGAC, Debbie Carlson manages the Cowlitz Falls Project (CFP). We are excited to have you on board to help support this project. I have attached a brief summary of the Project and the Power Purchase Agreement for some background. I was also thinking that next week we should set up a touch base call and go over recent issues at the project as well as any initial questions you have. I will check your calendar and set something up.
On 5/13, we will be having a discussion with Black & Veatch and CFP staff concerning a draft long range plan/asset management strategy. I think it would be very beneficial if you would be able to attend. I will forward the invite and a draft report is attached. We are currently working with CFP on their FY21 budget, which we would like in place (agreed on by both parties) by August 2020. The B&V document they are working on is supposed to help support future budget planning and BPA involvement is key as our input on budget and cost effective operations need to be reflected.
We look forward to having you as a part of the team!
Best Regards,
Cherie

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
Aug-95	$ 1,087,689.92	$ 1,087,689.92	7,362,000			$ 2,175,379.83	$ 0.2955	$ 0.1477				Aug-95
Sep-95	$ 1,087,689.92	$ 1,087,689.92	3,018,000			$ 2,175,379.83	$ 0.7208	$ 0.3604				Sep-95
Oct-95	$ 1,087,689.92	$ 1,087,689.92	4,548,000			$ 2,175,379.83	$ 0.4783	$ 0.2392				Oct-95
Nov-95	$ 1,087,435.75	$ 174,764.58	36,295,000			$ 1,262,200.33	$ 0.0348	$ 0.0048				Nov-95
Dec-95	$ 1,087,435.75	$ 174,764.58	37,068,000			$ 1,262,200.33	$ 0.0341	$ 0.0047				Dec-95
Jan-96	$ 1,087,435.75	$ 174,764.58	33,867,000			$ 1,262,200.33	$ 0.0373	$ 0.0052				Jan-96
Feb-96	$ 1,087,435.75	$ 174,764.58	19,640,000			$ 1,262,200.33	$ 0.0643	$ 0.0089				Feb-96
Mar-96	$ 1,087,435.75	$ 174,764.58	16,130,000			$ 1,262,200.33	$ 0.0783	$ 0.0108				Mar-96
Apr-96	$ 1,087,435.75	$ 174,764.58	24,130,000			$ 1,262,200.33	$ 0.0523	$ 0.0072				Apr-96
May-96	$ 1,087,435.75	$ 174,764.58	27,726,000			$ 1,262,200.33	$ 0.0455	$ 0.0063	$ 4,486,421.83	$ 15,361,541.83	209,784,000	May-96
Jun-96	$ 1,087,435.75	$ 174,764.58	20,883,000			$ 1,262,200.33	$ 0.0604	$ 0.0084	$ 4,661,186.42	$ 16,623,742.17	230,667,000	Jun-96
Jul-96	$ 1,087,435.75	$ 174,764.58	13,408,000			$ 1,262,200.33	$ 0.0941	$ 0.0130	$ 4,835,951.00	$ 17,885,942.50	244,075,000	Jul-96
Aug-96	$ 1,087,435.75	$ 160,920.25	7,710,000			$ 1,248,356.00	$ 0.1619	$ 0.0209	$ 3,909,181.33	$ 16,958,918.66	244,423,000	Aug-96
Sep-96	$ 1,087,435.75	$ 160,920.25	5,718,000			$ 1,248,356.00	$ 0.2183	$ 0.0281	$ 2,982,411.66	$ 16,031,894.83	247,123,000	Sep-96
Oct-96	$ 1,087,435.75	$ 160,920.25	6,400,000			$ 1,248,356.00	$ 0.1951	$ 0.0251	$ 2,055,641.99	$ 15,104,870.99	248,975,000	Oct-96
Nov-96	$ 1,087,667.00	$ 160,920.25	20,779,000			$ 1,248,587.25	$ 0.0601	$ 0.0077	$ 2,041,797.65	$ 15,091,257.90	233,459,000	Nov-96
Dec-96	$ 1,087,667.00	$ 160,920.25	33,675,000			$ 1,248,587.25	$ 0.0371	$ 0.0048	$ 2,027,953.32	$ 15,077,644.82	230,066,000	Dec-96
Jan-97	$ 1,087,667.00	$ 160,920.25	38,385,000			$ 1,248,587.25	$ 0.0325	$ 0.0042	$ 2,014,108.98	$ 15,064,031.73	234,584,000	Jan-97
Feb-97	$ 1,087,667.00	$ 160,920.25	29,025,000			$ 1,248,587.25	$ 0.0430	$ 0.0055	$ 2,000,264.64	$ 15,050,418.64	243,969,000	Feb-97
Mar-97	$ 1,087,667.00	$ 160,920.25	31,799,000			$ 1,248,587.25	$ 0.0393	$ 0.0051	$ 1,986,420.31	$ 15,036,805.56	259,638,000	Mar-97
Apr-97	$ 1,087,667.00	$ 160,920.25	31,349,400			$ 1,248,587.25	$ 0.0398	$ 0.0051	$ 1,972,575.97	$ 15,023,192.47	266,857,400	Apr-97
May-97	$ 1,087,667.00	$ 160,920.25	45,447,700			$ 1,248,587.25	$ 0.0275	$ 0.0035	$ 1,958,731.63	$ 15,009,579.38	284,579,100	May-97
Jun-97	$ 1,087,667.00	$ 160,920.25	38,423,400			$ 1,248,587.25	$ 0.0325	$ 0.0042	$ 1,944,887.30	$ 14,995,966.30	302,119,500	Jun-97
Jul-97	$ 1,087,667.00	$ 160,920.25	23,643,100			$ 1,248,587.25	$ 0.0528	$ 0.0068	$ 1,931,042.96	$ 14,982,353.21	312,354,600	Jul-97
Aug-97	$ 1,087,667.00	$ 235,990.19	10,643,700			$ 1,323,657.19	$ 0.1244	$ 0.0222	$ 2,006,112.90	$ 15,057,654.40	315,288,300	Aug-97
Sep-97	$ 1,087,667.00	$ 124,781.96	10,903,400			$ 1,212,448.96	$ 0.1112	$ 0.0114	$ 1,969,974.62	$ 15,021,747.37	320,473,700	Sep-97
Oct-97	$ 1,087,667.00	$ 247,046.83	23,557,900			$ 1,334,713.83	$ 0.0567	$ 0.0105	$ 2,056,101.20	$ 15,108,105.20	337,631,600	Oct-97
Nov-97	$ 1,087,660.33	$ 105,502.09	29,453,000			$ 1,193,162.42	$ 0.0405	$ 0.0036	$ 2,000,683.04	$ 15,052,680.38	346,305,600	Nov-97
Dec-97	$ 1,087,660.33	$ 100,471.30	22,292,100			$ 1,188,131.63	$ 0.0533	$ 0.0045	$ 1,940,234.10	$ 14,992,224.76	334,922,700	Dec-97
Jan-98	$ 1,087,660.33	$ 107,455.22	29,327,100			$ 1,195,115.55	$ 0.0408	$ 0.0037	$ 1,886,769.07	$ 14,938,753.07	325,864,800	Jan-98
Feb-98	$ 1,087,660.33	$ 125,323.27	19,805,700			$ 1,212,983.60	$ 0.0612	$ 0.0063	$ 1,851,172.09	$ 14,903,149.43	316,645,500	Feb-98
Mar-98	$ 1,087,660.33	$ 165,618.26	23,183,500			$ 1,253,278.59	$ 0.0541	$ 0.0071	$ 1,855,870.11	$ 14,907,840.77	308,030,000	Mar-98
Apr-98	$ 1,087,660.33	$ 266,407.19	19,221,500			$ 1,354,067.52	$ 0.0704	$ 0.0139	$ 1,961,357.05	$ 15,013,321.05	295,902,100	Apr-98
May-98	$ 1,087,660.33	$ 183,609.27	33,884,800			$ 1,271,269.60	$ 0.0375	$ 0.0054	$ 1,984,046.07	$ 15,036,003.41	284,339,200	May-98
Jun-98	$ 1,087,660.33	$ 197,398.33	26,753,900			$ 1,285,058.66	$ 0.0480	$ 0.0074	$ 2,020,524.16	$ 15,072,474.82	272,669,700	Jun-98
Jul-98	$ 1,087,660.33	$ 174,786.45	13,484,900			$ 1,262,446.78	$ 0.0936	$ 0.0130	$ 2,034,390.36	$ 15,086,334.36	262,511,500	Jul-98
Aug-98	$ 1,087,660.33	$ 106,485.85	7,310,800			$ 1,194,146.18	$ 0.1633	$ 0.0146	$ 1,904,886.02	$ 14,956,823.35	259,178,600	Aug-98
Sep-98	$ 1,087,660.33	$ 170,706.37	5,433,700			$ 1,258,366.70	$ 0.2316	$ 0.0314	$ 1,950,810.43	$ 15,002,741.10	253,708,900	Sep-98
Oct-98	$ 1,087,660.33	$ 183,622.76	4,826,800			$ 1,271,283.09	$ 0.2634	$ 0.0380	$ 1,887,386.36	$ 14,939,310.36	234,977,800	Oct-98
Nov-98	$ 1,087,838.67	$ 380,498.37	20,194,500			$ 1,468,337.04	$ 0.0727	$ 0.0188	$ 2,162,382.64	$ 15,214,484.97	225,719,300	Nov-98
Dec-98	$ 1,087,838.67	$ 216,371.64	33,621,600			$ 1,304,210.31	$ 0.0388	$ 0.0064	$ 2,278,282.98	$ 15,330,563.65	237,048,800	Dec-98
Jan-99	$ 1,087,838.67	$ 221,818.07	37,055,100			$ 1,309,656.74	$ 0.0353	$ 0.0060	$ 2,392,645.83	$ 15,445,104.83	244,776,800	Jan-99
Feb-99	$ 1,087,838.67	$ 127,480.35	22,729,200			$ 1,215,319.02	$ 0.0535	$ 0.0056	$ 2,394,802.91	$ 15,447,440.24	247,700,300	Feb-99
Mar-99	$ 1,087,838.67	$ 139,612.96	26,070,800			$ 1,227,451.63	$ 0.0471	$ 0.0054	$ 2,368,797.61	$ 15,421,613.28	250,587,600	Mar-99
Apr-99	$ 1,087,838.67	$ 152,872.67	22,794,500			$ 1,240,711.34	$ 0.0544	$ 0.0067	$ 2,255,263.09	$ 15,308,257.09	254,160,600	Apr-99

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
May-99	$ 1,087,838.67	$ 69,503.88	36,140,600			$ 1,157,342.55	$ 0.0320	$ 0.0019	$ 2,141,157.70	$ 15,194,330.03	256,416,400	May-99
Jun-99	$ 1,087,838.67	$ 137,565.50	46,628,400			$ 1,225,404.17	$ 0.0263	$ 0.0030	$ 2,081,324.87	$ 15,134,675.54	276,290,900	Jun-99
Jul-99	$ 1,087,838.67	$ 146,073.78	37,498,900			$ 1,233,912.45	$ 0.0329	$ 0.0039	$ 2,052,612.20	$ 15,106,141.20	300,304,900	Jul-99
Aug-99	$ 1,087,838.67	$ 86,685.49	17,347,900			$ 1,174,524.16	$ 0.0677	$ 0.0050	$ 2,032,811.84	$ 15,086,319.17	310,342,000	Aug-99
Sep-99	$ 1,087,838.67	$ 92,146.43	7,471,400			$ 1,179,985.10	$ 0.1579	$ 0.0123	$ 1,954,251.90	$ 15,008,137.57	312,379,700	Sep-99
Oct-99	$ 1,087,838.67	$ 128,653.04	5,367,100			$ 1,216,491.71	$ 0.2267	$ 0.0240	$ 1,899,282.18	$ 14,953,346.18	312,920,000	Oct-99
Nov-99	$ 1,087,647.83	$ 187,634.16	27,419,400			$ 1,275,281.99	$ 0.0465	$ 0.0068	$ 1,706,417.97	$ 14,760,291.14	320,144,900	Nov-99
Dec-99	$ 1,087,647.83	$ 97,728.51	37,705,200			$ 1,185,376.34	$ 0.0314	$ 0.0026	$ 1,587,774.84	$ 14,641,457.17	324,228,500	Dec-99
Jan-00	$ 1,087,647.83	$ 175,927.25	19,433,200			$ 1,263,575.08	$ 0.0650	$ 0.0091	$ 1,541,884.02	$ 14,595,375.52	306,606,600	Jan-00
Feb-00	$ 1,087,647.83	$ 86,685.49	22,455,600			$ 1,174,333.32	$ 0.0523	$ 0.0039	$ 1,501,089.16	$ 14,554,389.83	306,333,000	Feb-00
Mar-00	$ 1,087,647.83	$ 115,018.19	18,461,900			$ 1,202,666.02	$ 0.0651	$ 0.0062	$ 1,476,494.39	$ 14,529,604.22	298,724,100	Mar-00
Apr-00	$ 1,087,647.83	$ 96,779.04	32,499,700			$ 1,184,426.87	$ 0.0364	$ 0.0030	$ 1,420,400.76	$ 14,473,319.76	308,429,300	Apr-00
May-00	$ 1,087,647.83	$ 225,439.28	35,755,600			$ 1,313,087.11	$ 0.0367	$ 0.0063	$ 1,576,336.16	$ 14,629,064.33	308,044,300	May-00
Jun-00	$ 1,087,647.83	$ 390,217.01	34,361,100			$ 1,477,864.84	$ 0.0430	$ 0.0114	$ 1,828,987.67	$ 14,881,525.00	295,777,000	Jun-00
Jul 00	$ 1,087,647.83	$ 266,208.79	15,539,200			$ 1,353,856.62	$ 0.0871	$ 0.0171	$ 1,949,122.68	$ 15,001,469.18	273,817,300	Jul 00
Aug-00	$ 1,087,647.83	$ 107,982.49	7,953,800			$ 1,195,630.32	$ 0.1503	$ 0.0136	$ 1,970,419.68	$ 15,022,575.35	264,423,200	Aug-00
Sep-00	$ 1,087,647.83	$ 166,203.99	4,380,500			$ 1,253,851.82	$ 0.2862	$ 0.0379	$ 2,044,477.24	$ 15,096,442.07	261,332,300	Sep-00
Oct-00	$ 1,087,647.83	$ 94,228.45	8,690,200			$ 1,181,876.28	$ 0.1360	$ 0.0108	$ 2,010,052.65	$ 15,061,826.65	264,655,400	Oct-00
Nov-00	$ 1,087,919.17	$ 156,161.11	3,357,300			$ 1,244,080.28	$ 0.3706	$ 0.0465	$ 1,978,579.60	$ 15,030,624.93	240,593,300	Nov-00
Dec-00	$ 1,087,919.17	$ 67,524.84	5,505,500			$ 1,155,444.01	$ 0.2099	$ 0.0123	$ 1,948,375.93	$ 15,000,692.60	208,393,600	Dec-00
Jan-01	$ 1,087,919.17	$ 82,470.60	11,285,700			$ 1,170,389.77	$ 0.1037	$ 0.0073	$ 1,854,919.28	$ 14,907,507.28	200,246,100	Jan-01
Feb-01	$ 1,087,919.17	$ 152,826.89	9,342,400			$ 1,240,746.06	$ 0.1328	$ 0.0164	$ 1,921,060.68	$ 14,973,920.01	187,132,900	Feb-01
Mar-01	$ 1,087,919.17	$ 363,226.28	13,216,500			$ 1,451,145.45	$ 0.1098	$ 0.0275	$ 2,169,268.77	$ 15,222,399.44	181,887,500	Mar-01
Apr-01	$ 1,087,919.17	$ 85,108.62	18,508,800			$ 1,173,027.79	$ 0.0634	$ 0.0046	$ 2,157,598.35	$ 15,211,000.35	167,896,600	Apr-01
May-01	$ 1,087,919.17	$ 129,473.81	33,570,200			$ 1,217,392.98	$ 0.0363	$ 0.0039	$ 2,061,632.88	$ 15,115,306.21	165,711,200	May-01
Jun-01	$ 1,087,919.17	$ 183,033.81	19,058,200			$ 1,270,952.98	$ 0.0667	$ 0.0096	$ 1,854,449.68	$ 14,908,394.35	150,408,300	Jun-01
Jul-01	$ 1,087,919.17	$ 186,935.44	10,714,700			$ 1,274,854.61	$ 0.1190	$ 0.0174	$ 1,775,176.33	$ 14,829,392.33	145,583,800	Jul-01
Aug-01	$ 1,087,919.17	$ 181,353.95	6,757,700			$ 1,269,273.12	$ 0.1878	$ 0.0268	$ 1,848,547.79	$ 14,903,035.12	144,387,700	Aug-01
Sep-01	$ 1,087,919.17	$ 76,743.06	509,800			$ 1,164,662.23	$ 2.2845	$ 0.1505	$ 1,759,086.86	$ 14,813,845.53	140,517,000	Sep-01
Oct-01	$ 1,087,919.17	$ 253,318.04	3,767,700			$ 1,341,237.21	$ 0.3560	$ 0.0672	$ 1,918,176.45	$ 14,973,206.45	135,594,500	Oct-01
Nov-01	$ 1,087,919.17	$ 74,415.19	29,611,300			$ 1,162,334.36	$ 0.0393	$ 0.0025	$ 1,836,430.53	$ 14,891,460.53	161,848,500	Nov-01
Dec-01	$ 1,087,919.17	$ 85,365.08	29,761,300			$ 1,173,284.25	$ 0.0394	$ 0.0029	$ 1,854,270.77	$ 14,909,300.77	186,104,300	Dec-01
Jan-02	$ 1,087,724.42	$ 83,934.57	28,017,500			$ 1,171,658.99	$ 0.0418	$ 0.0030	$ 1,855,734.74	$ 14,910,569.99	202,836,100	Jan-02
Feb-02	$ 1,087,724.42	$ 120,100.76	20,110,400			$ 1,207,825.18	$ 0.0601	$ 0.0060	$ 1,823,008.61	$ 14,877,649.11	213,604,100	Feb-02
Mar-02	$ 1,087,724.42	$ 112,208.12	21,703,500			$ 1,199,932.54	$ 0.0553	$ 0.0052	$ 1,571,990.45	$ 14,626,436.20	222,091,100	Mar-02
Apr-02	$ 1,087,724.42	$ 82,445.35	32,294,100			$ 1,170,169.77	$ 0.0362	$ 0.0026	$ 1,569,327.18	$ 14,623,578.18	235,876,400	Apr-02
May-02	$ 1,087,724.42	$ 141,628.91	38,635,600			$ 1,229,353.33	$ 0.0318	$ 0.0037	$ 1,581,482.28	$ 14,635,538.53	240,941,800	May-02
Jun-02	$ 1,087,724.42	$ 87,124.64	43,356,300			$ 1,174,849.06	$ 0.0271	$ 0.0020	$ 1,485,573.11	$ 14,539,434.61	265,239,900	Jun-02
Jul-02	$ 1,087,724.42	$ 409,105.19	19,511,800			$ 1,496,829.61	$ 0.0767	$ 0.0210	$ 1,707,742.86	$ 14,761,409.61	274,037,000	Jul-02
Aug-02	$ 1,087,724.42	$ 91,723.26	7,640,000			$ 1,179,447.68	$ 0.1544	$ 0.0120	$ 1,618,112.17	$ 14,671,584.17	274,919,300	Aug-02
Sep-02	$ 1,087,724.42	$ 77,916.87	5,415,200			$ 1,165,641.29	$ 0.2153	$ 0.0144	$ 1,619,285.98	$ 14,672,563.23	279,824,700	Sep-02
Oct-02	$ 1,087,724.42	$ 89,922.05	370,600			$ 1,177,646.47	$ 3.1777	$ 0.2426	$ 1,455,889.99	$ 14,508,972.49	276,427,600	Oct-02
Nov-02	$ 1,087,724.42	$ 72,111.94	2,384,400			$ 1,159,836.36	$ 0.4864	$ 0.0302	$ 1,453,586.74	$ 14,506,474.49	249,200,700	Nov-02
Dec-02	$ 1,087,724.42	$ 98,426.70	11,050,800			$ 1,186,151.12	$ 0.1073	$ 0.0089	$ 1,466,648.36	$ 14,519,341.36	230,490,200	Dec-02
Jan-03	$ 1,087,842.08	$ 119,554.01	29,144,800			$ 1,207,396.09	$ 0.0414	$ 0.0041	$ 1,502,267.80	$ 14,555,078.47	231,617,500	Jan-03

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
Feb-03	$ 1,087,842.08	$ 108,170.39	20,525,900			$ 1,196,012.47	$ 0.0583	$ 0.0053	$ 1,490,337.43	$ 14,543,265.76	232,033,000	Feb-03
Mar-03	$ 1,087,842.08	$ 175,656.55	30,643,700			$ 1,263,498.63	$ 0.0412	$ 0.0057	$ 1,553,785.86	$ 14,606,831.86	240,973,200	Mar-03
Apr-03	$ 1,087,842.08	$ 101,487.02	24,262,200			$ 1,189,329.10	$ 0.0490	$ 0.0042	$ 1,572,827.53	$ 14,625,991.20	232,941,300	Apr-03
May-03	$ 1,087,842.08	$ 115,667.61	25,862,300			$ 1,203,509.69	$ 0.0465	$ 0.0045	$ 1,546,866.23	$ 14,600,147.56	220,168,000	May-03
Jun-03	$ 1,087,842.08	$ 208,345.19	20,797,000			$ 1,296,187.27	$ 0.0623	$ 0.0100	$ 1,668,086.78	$ 14,721,485.78	197,608,700	Jun-03
Jul-03	$ 1,087,842.08	$ 348,432.65	8,469,300			$ 1,436,274.73	$ 0.1696	$ 0.0411	$ 1,607,414.24	$ 14,660,930.91	186,566,200	Jul-03
Aug-03	$ 1,087,842.08	$ 174,514.74	4,689,300			$ 1,262,356.82	$ 0.2692	$ 0.0372	$ 1,690,205.72	$ 14,743,840.05	183,615,500	Aug-03
Sep-03	$ 1,087,842.08	$ 186,897.32	2,843,900			$ 1,274,739.40	$ 0.4482	$ 0.0657	$ 1,799,186.17	$ 14,852,938.17	181,044,200	Sep-03
Oct-03	$ 943,373.22	$ 104,919.74	8,412,700			$ 1,048,292.96	$ 0.1246	$ 0.0125	$ 1,814,183.86	$ 14,723,584.67	189,086,300	Oct-03
Nov-03	$ 943,373.22	$ 137,788.51	15,793,700			$ 1,081,161.73	$ 0.0685	$ 0.0087	$ 1,879,860.43	$ 14,644,910.04	202,495,600	Nov-03
Dec-03	$ 943,373.22	$ 95,342.16	24,226,000			$ 1,038,715.38	$ 0.0429	$ 0.0039	$ 1,876,775.89	$ 14,497,474.31	215,670,800	Dec-03
Jan-04	$ 943,373.22	$ 117,083.72	25,151,900			$ 1,060,456.94	$ 0.0422	$ 0.0047	$ 1,874,305.60	$ 14,350,535.15	211,677,900	Jan-04
Feb-04	$ 943,373.22	$ 110,627.67	21,040,300			$ 1,054,000.89	$ 0.0501	$ 0.0053	$ 1,876,762.88	$ 14,208,523.57	212,192,300	Feb-04
Mar-04	$ 943,373.22	$ 146,641.98	22,904,600			$ 1,090,015.20	$ 0.0476	$ 0.0064	$ 1,847,748.31	$ 14,035,040.14	204,453,200	Mar-04
Apr-04	$ 943,373.22	$ 139,447.97	25,254,000			$ 1,082,821.19	$ 0.0429	$ 0.0055	$ 1,885,709.26	$ 13,928,532.23	205,445,000	Apr-04
May-04	$ 943,373.22	$ 195,781.49	32,564,300			$ 1,139,154.71	$ 0.0350	$ 0.0060	$ 1,965,823.14	$ 13,864,177.25	212,147,000	May-04
Jun-04	$ 943,373.22	$ 131,479.38	25,827,200			$ 1,074,852.60	$ 0.0416	$ 0.0051	$ 1,888,957.33	$ 13,642,842.58	217,177,200	Jun-04
Jul-04	$ 943,373.22	$ 129,554.25	20,135,900			$ 1,072,927.47	$ 0.0533	$ 0.0064	$ 1,670,078.93	$ 13,279,495.32	228,843,800	Jul-04
Aug-04	$ 943,373.22	$ 317,920.82	9,244,300			$ 1,261,294.04	$ 0.1364	$ 0.0344	$ 1,813,485.01	$ 13,278,432.53	233,398,800	Aug-04
Sep-04	$ 943,373.22	$ 117,500.15	12,002,900			$ 1,060,873.37	$ 0.0884	$ 0.0098	$ 1,744,087.84	$ 13,064,566.50	242,557,800	Sep-04
Oct-04	$ 943,373.22	$ 90,878.95	11,856,700			$ 1,034,252.17	$ 0.0872	$ 0.0077	$ 1,730,047.05	$ 13,050,525.71	246,001,800	Oct-04
Nov-04	$ 943,373.22	$ 74,841.95	17,671,200			$ 1,018,215.17	$ 0.0576	$ 0.0042	$ 1,667,100.49	$ 12,987,579.15	247,879,300	Nov-04
Dec-04	$ 943,373.22	$ 139,857.44	24,530,400			$ 1,083,230.66	$ 0.0442	$ 0.0057	$ 1,711,615.77	$ 13,032,094.43	248,183,700	Dec-04
Jan-05	$ 943,373.22	$ 105,217.10	21,673,500			$ 1,048,590.32	$ 0.0484	$ 0.0049	$ 1,699,749.15	$ 13,020,227.81	244,705,300	Jan-05
Feb-05	$ 943,373.22	$ 93,478.30	10,785,000			$ 1,036,851.52	$ 0.0961	$ 0.0087	$ 1,682,599.78	$ 13,003,078.44	234,450,000	Feb-05
Mar-05	$ 943,373.22	$ 83,430.29	13,683,900			$ 1,026,803.51	$ 0.0750	$ 0.0061	$ 1,619,388.09	$ 12,939,866.75	225,229,300	Mar-05
Apr-05	$ 943,373.22	$ 213,006.24	26,416,100			$ 1,156,379.46	$ 0.0438	$ 0.0081	$ 1,692,946.36	$ 13,013,425.02	226,391,400	Apr-05
May-05	$ 943,373.22	$ 177,472.09	24,870,800			$ 1,120,845.31	$ 0.0451	$ 0.0071	$ 1,674,636.96	$ 12,995,115.62	218,697,900	May-05
Jun-05	$ 943,373.22	$ 137,430.00	12,556,200			$ 1,080,803.22	$ 0.0861	$ 0.0109	$ 1,680,587.58	$ 13,001,066.24	205,426,900	Jun-05
Jul-05	$ 943,373.22	$ 290,460.88	8,347,000			$ 1,233,834.10	$ 0.1478	$ 0.0348	$ 1,841,494.21	$ 13,161,972.87	193,638,000	Jul-05
Aug-05	$ 943,373.22	$ 108,834.34	5,380,500			$ 1,052,207.56	$ 0.1956	$ 0.0202	$ 1,632,407.73	$ 12,952,886.39	189,774,200	Aug-05
Sep-05	$ 943,373.22	$ 220,795.12	4,690,600			$ 1,164,168.34	$ 0.2482	$ 0.0471	$ 1,735,702.70	$ 13,056,181.36	182,461,900	Sep-05
Oct-05	$ 943,373.22	$ 139,218.54	6,084,400			$ 1,082,591.76	$ 0.1779	$ 0.0229	$ 1,784,042.29	$ 13,104,520.95	176,689,600	Oct-05
Nov-05	$ 943,373.22	$ 86,564.57	20,358,700			$ 1,029,937.79	$ 0.0506	$ 0.0043	$ 1,795,764.91	$ 13,116,243.57	179,377,100	Nov-05
Dec-05	$ 943,373.22	$ 94,666.70	23,541,200			$ 1,038,039.92	$ 0.0441	$ 0.0040	$ 1,750,574.17	$ 13,071,052.83	178,387,900	Dec-05
Jan-06	$ 943,373.22	$ 126,279.77	42,258,600			$ 1,069,652.99	$ 0.0253	$ 0.0030	$ 1,771,636.84	$ 13,092,115.50	198,973,000	Jan-06
Feb-06	$ 943,373.22	$ 81,906.55	25,030,900			$ 1,025,279.77	$ 0.0410	$ 0.0033	$ 1,760,065.09	$ 13,080,543.75	213,218,900	Feb-06
Mar-06	$ 943,373.22	$ 134,364.70	14,361,400			$ 1,077,737.92	$ 0.0750	$ 0.0094	$ 1,810,999.50	$ 13,131,478.16	213,896,400	Mar-06
Apr-06	$ 943,373.22	$ 188,246.00	23,460,100			$ 1,131,619.22	$ 0.0482	$ 0.0080	$ 1,786,239.26	$ 13,106,717.92	210,940,400	Apr-06
May-06	$ 943,373.22	$ 131,829.00	39,203,500			$ 1,075,202.22	$ 0.0274	$ 0.0034	$ 1,740,596.17	$ 13,061,074.83	225,273,100	May-06
Jun-06	$ 943,373.22	$ 123,582.00	33,411,400			$ 1,066,955.22	$ 0.0319	$ 0.0037	$ 1,726,748.17	$ 13,047,226.83	246,128,300	Jun-06
Jul-06	$ 943,373.22	$ 496,213.00	13,116,500			$ 1,439,586.22	$ 0.1098	$ 0.0378	$ 1,932,500.29	$ 13,252,978.95	250,897,800	Jul-06
Aug-06	$ 943,373.22	$ 131,191.00	6,405,300			$ 1,074,564.22	$ 0.1678	$ 0.0205	$ 1,954,856.95	$ 13,275,335.61	251,922,600	Aug-06
Sep-06	$ 943,373.22	$ 405,642.01	4,870,500			$ 1,349,015.23	$ 0.2770	$ 0.0833	$ 2,139,703.84	$ 13,460,182.50	252,102,500	Sep-06
Oct-06	$ 943,373.22	$ 93,066.48	1,003,600			$ 1,036,439.70	$ 1.0327	$ 0.0927	$ 2,093,551.78	$ 13,414,030.44	247,021,700	Oct-06

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
Nov-06	$ 943,373.22	$ 87,496.48	27,875,600			$ 1,030,869.70	$ 0.0370	$ 0.0031	$ 2,094,483.69	$ 13,414,962.35	254,538,600	Nov-06
Dec-06	$ 943,373.22	$ 140,080.36	27,405,000			$ 1,083,453.58	$ 0.0395	$ 0.0051	$ 2,139,897.35	$ 13,460,376.01	258,402,400	Dec-06
Jan-07	$ 943,373.22	$ 113,382.21	23,149,100			$ 1,056,755.43	$ 0.0456	$ 0.0049	$ 2,126,999.79	$ 13,447,478.45	239,292,900	Jan-07
Feb-07	$ 943,373.22	$ 281,199.00	21,172,900			$ 1,224,572.22	$ 0.0578	$ 0.0133	$ 2,326,292.24	$ 13,646,770.90	235,434,900	Feb-07
Mar-07	$ 943,373.22	$ 263,219.00	37,257,400			$ 1,206,592.22	$ 0.0324	$ 0.0071	$ 2,455,146.54	$ 13,775,625.20	258,330,900	Mar-07
Apr-07	$ 943,373.22	$ 267,504.79	24,870,900			$ 1,210,878.01	$ 0.0487	$ 0.0108	$ 2,534,405.33	$ 13,854,883.99	259,741,700	Apr-07
May-07	$ 943,373.22	$ 170,054.31	29,816,000			$ 1,113,427.53	$ 0.0373	$ 0.0057	$ 2,572,630.64	$ 13,893,109.30	250,354,200	May-07
Jun-07	$ 943,373.22	$ 127,472.33	23,164,400			$ 1,070,845.55	$ 0.0462	$ 0.0055	$ 2,576,520.97	$ 13,896,999.63	240,107,200	Jun-07
Jul-07	$ 943,373.22	$ 326,569.34	12,027,100			$ 1,269,942.56	$ 0.1056	$ 0.0272	$ 2,406,877.31	$ 13,727,355.97	239,017,800	Jul-07
Aug-07	$ 943,373.22	$ 133,219.55	5,955,700			$ 1,076,592.77	$ 0.1808	$ 0.0224	$ 2,408,905.86	$ 13,729,384.52	238,568,200	Aug-07
Sep-07	$ 943,373.22	$ 416,135.57	3,584,900			$ 1,359,508.79	$ 0.3792	$ 0.1161	$ 2,419,399.42	$ 13,739,878.08	237,282,600	Sep-07
Oct-07	$ 943,373.22	$ 120,063.49	7,486,800			$ 1,063,436.71	$ 0.1420	$ 0.0160	$ 2,446,396.43	$ 13,766,875.09	243,765,800	Oct-07
Nov-07	$ 943,373.22	$ 227,045.31	11,573,300			$ 1,170,418.53	$ 0.1011	$ 0.0196	$ 2,585,945.26	$ 13,906,423.92	227,463,500	Nov-07
Dec-07	$ 943,373.22	$ 171,109.31	23,123,200			$ 1,114,482.53	$ 0.0482	$ 0.0074	$ 2,616,974.21	$ 13,937,452.87	223,181,700	Dec-07
Jan 08	$ 943,373.22	$ 122,226.24	16,051,900			$ 1,065,599.46	$ 0.0664	$ 0.0076	$ 2,625,818.24	$ 13,946,296.90	216,084,500	Jan 08
Feb-08	$ 943,373.22	$ 103,038.85	13,836,000			$ 1,046,412.07	$ 0.0756	$ 0.0074	$ 2,447,658.09	$ 13,768,136.75	208,747,600	Feb-08
Mar-08	$ 943,373.22	$ 173,861.54	18,804,400			$ 1,117,234.76	$ 0.0594	$ 0.0092	$ 2,358,300.63	$ 13,678,779.29	190,294,600	Mar-08
Apr-08	$ 943,373.22	$ 123,585.00	15,535,100			$ 1,066,958.22	$ 0.0687	$ 0.0080	$ 2,214,380.84	$ 13,534,859.50	180,958,800	Apr-08
May-08	$ 943,373.22	$ 185,960.00	40,154,700			$ 1,129,333.22	$ 0.0281	$ 0.0046	$ 2,230,286.53	$ 13,550,765.19	191,297,500	May-08
Jun-08	$ 943,373.22	$ 291,522.67	47,729,600			$ 1,234,895.89	$ 0.0259	$ 0.0061	$ 2,067,767.53	$ 12,444,872.97	203,835,600	Jun-08
Jul-08	$ 943,373.22	$ 249,665.25	25,656,600			$ 1,193,038.47	$ 0.0465	$ 0.0097	$ 2,184,213.23	$ 12,561,318.67	223,536,500	Jul-08
Aug-08	$ 943,373.22	$ 95,777.65	9,884,800			$ 1,039,150.87	$ 0.1051	$ 0.0097	$ 1,863,855.31	$ 12,240,960.75	229,836,400	Aug-08
Sep-08	$ 943,373.22	$ 252,194.70	6,106,000			$ 1,195,567.92	$ 0.1958	$ 0.0413	$ 1,995,986.52	$ 12,373,091.96	228,455,600	Sep-08
Oct-08	$ 943,373.22	$ 192,494.59	332,600			$ 1,135,867.81	$ 3.4151	$ 0.5788	$ 1,961,435.80	$ 12,338,541.24	217,214,900	Oct-08
Nov-08	$ 943,373.22	$ 166,068.53	232,200			$ 1,109,441.75	$ 4.7780	$ 0.7152	$ 1,956,395.02	$ 12,333,500.46	194,323,900	Nov-08
Dec-08	$ 943,373.22	$ 102,476.08	12,988,200			$ 1,045,849.30	$ 0.0805	$ 0.0079	$ 1,936,644.86	$ 12,313,750.30	191,260,200	Dec-08
Jan-09	$ 943,373.22	$ 108,919.19	28,523,000			$ 1,052,292.41	$ 0.0369	$ 0.0038	$ 1,942,525.20	$ 12,319,630.64	205,947,200	Jan-09
Feb-09	$ 943,373.22	$ 188,478.08	13,149,600			$ 1,131,851.30	$ 0.0861	$ 0.0143	$ 1,957,141.74	$ 12,334,247.18	200,292,400	Feb-09
Mar-09	$ 943,373.22	$ 140,813.81	15,471,200			$ 1,084,187.03	$ 0.0701	$ 0.0091	$ 1,974,370.55	$ 12,351,475.99	200,228,500	Mar-09
Apr-09	$ 943,373.22	$ 126,963.22	26,133,900			$ 1,070,336.44	$ 0.0410	$ 0.0049	$ 1,915,373.77	$ 12,292,479.21	186,207,700	Apr-09
May-09	$ 943,373.22	$ 232,837.03	43,816,300			$ 1,176,210.25	$ 0.0268	$ 0.0053	$ 2,148,210.80	$ 13,468,689.46	230,024,000	May-09
Jun-09	$ 943,373.22	$ 139,148.99	30,882,100			$ 1,082,522.21	$ 0.0351	$ 0.0045	$ 1,995,837.12	$ 13,316,315.78	213,176,500	Jun-09
Jul-09	$ 943,373.22	$ 309,092.31	11,787,300			$ 1,252,465.53	$ 0.1063	$ 0.0262	$ 2,055,264.18	$ 13,375,742.84	199,307,200	Jul-09
Aug-09	$ 943,373.22	$ 311,645.00	5,997,900			$ 1,255,018.22	$ 0.2092	$ 0.0520	$ 2,271,131.53	$ 13,591,610.19	195,420,300	Aug-09
Sep-09	$ 943,373.22	$ 266,470.25	5,031,100			$ 1,209,843.47	$ 0.2405	$ 0.0530	$ 2,285,407.08	$ 13,605,885.74	194,345,400	Sep-09
Oct-09	$ 943,373.22	$ 167,769.00	5,143,000			$ 1,111,142.22	$ 0.2160	$ 0.0326	$ 2,260,681.49	$ 13,581,160.15	199,155,800	Oct-09
Nov-09	$ 943,373.22	$ 184,067.00	25,900,800			$ 1,127,440.22	$ 0.0435	$ 0.0071	$ 2,278,679.96	$ 13,599,158.62	224,824,400	Nov-09
Dec-09	$ 943,373.22	$ 116,977.89	21,928,300			$ 1,060,351.11	$ 0.0484	$ 0.0053	$ 2,293,181.77	$ 13,613,660.43	233,764,500	Dec-09
Jan-10	$ 943,373.22	$ 135,819.70	30,222,500			$ 1,079,192.92	$ 0.0357	$ 0.0045	$ 2,320,082.28	$ 13,640,560.94	235,464,000	Jan-10
Feb-10	$ 943,373.22	$ 148,384.98	14,719,700			$ 1,091,758.20	$ 0.0742	$ 0.0101	$ 2,279,989.18	$ 13,600,467.84	237,034,100	Feb-10
Mar-10	$ 943,373.22	$ 134,618.67	16,629,200			$ 1,077,991.89	$ 0.0648	$ 0.0081	$ 2,273,794.04	$ 13,594,272.70	238,192,100	Mar-10
Apr-10	$ 943,373.22	$ 154,486.48	23,080,900			$ 1,097,859.70	$ 0.0476	$ 0.0067	$ 2,301,317.30	$ 13,621,795.96	235,139,100	Apr-10
May-10	$ 943,373.22	$ 266,003.74	32,599,300			$ 1,209,376.96	$ 0.0371	$ 0.0082	$ 2,334,484.01	$ 13,654,962.67	223,922,100	May-10
Jun-10	$ 943,373.22	$ 495,563.74	40,196,100			$ 1,438,936.96	$ 0.0358	$ 0.0123	$ 2,690,898.76	$ 14,011,377.42	233,236,100	Jun-10
Jul-10	$ 943,373.22	$ 146,253.00	17,677,000			$ 1,089,626.22	$ 0.0616	$ 0.0083	$ 2,528,059.45	$ 13,848,538.11	239,125,800	Jul-10

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
Aug-10	$ 943,373.22	$ 357,082.28	7,702,100			$ 1,300,455.50	$ 0.1688	$ 0.0464	$ 2,573,496.73	$ 13,893,975.39	240,830,000	Aug-10
Sep-10	$ 943,373.22	$ 433,977.27	6,841,900			$ 1,377,350.49	$ 0.2013	$ 0.0634	$ 2,741,003.75	$ 14,061,482.41	242,640,800	Sep-10
Oct-10	$ 943,373.22	$ 168,886.19	7,734,400			$ 1,112,259.41	$ 0.1438	$ 0.0218	$ 2,742,120.94	$ 14,062,599.60	245,232,200	Oct-10
Nov-10	$ 943,373.22	$ 468,133.64	24,578,400			$ 1,411,506.86	$ 0.0574	$ 0.0190	$ 3,026,187.58	$ 14,346,666.24	243,909,800	Nov-10
Dec-10	$ 943,373.22	$ 336,996.76	27,777,000			$ 1,280,369.98	$ 0.0461	$ 0.0121	$ 3,246,206.45	$ 14,566,685.11	249,758,500	Dec-10
Jan-11	$ 943,373.22	$ 139,712.82	12,461,700			$ 1,083,086.04	$ 0.0869	$ 0.0112	$ 3,250,099.57	$ 14,570,578.23	231,997,700	Jan-11
Feb-11	$ 943,373.22	$ 214,303.01	1			$ 1,157,676.23	$ 1,157,676.2319	$ 214,303.0100	$ 3,316,017.60	$ 14,636,496.26	217,278,001	Feb-11
Mar-11	$ 943,373.22	$ 342,202.51	5,180,600			$ 1,285,575.73	$ 0.2482	$ 0.0661	$ 3,523,601.44	$ 14,844,080.10	205,829,401	Mar-11
Apr-11	$ 943,373.22	$ 688,393.59	21,489,300			$ 1,631,766.81	$ 0.0759	$ 0.0320	$ 4,057,508.55	$ 15,377,987.21	204,237,801	Apr-11
May-11	$ 943,373.22	$ 817,971.16	37,051,400			$ 1,761,344.38	$ 0.0475	$ 0.0221	$ 4,609,475.97	$ 15,929,954.63	208,689,901	May-11
Jun-11	$ 943,373.22	$ 346,572.92	22,648,900			$ 1,289,946.14	$ 0.0570	$ 0.0153	$ 4,460,485.15	$ 15,780,963.81	191,142,701	Jun-11
Jul-11	$ 943,373.22	$ 418,590.16	30,527,500			$ 1,361,963.38	$ 0.0446	$ 0.0137	$ 4,732,822.31	$ 16,053,300.97	203,993,201	Jul-11
Aug-11	$ 943,373.22	$ 153,939.35	13,172,300			$ 1,097,312.57	$ 0.0833	$ 0.0117	$ 4,529,679.38	$ 15,850,158.04	209,463,401	Aug-11
Sep-11	$ 943,373.22	$ 205,840.53	7,879,000			$ 1,149,213.75	$ 0.1459	$ 0.0261	$ 4,301,542.64	$ 15,622,021.30	210,500,501	Sep-11
Oct-11	$ 943,373.22	$ 136,644.21	8,706,800			$ 1,080,017.43	$ 0.1240	$ 0.0157	$ 4,269,300.66	$ 15,589,779.32	211,472,901	Oct-11
Nov-11	$ 943,373.22	$ 230,226.90	17,182,000			$ 1,173,600.12	$ 0.0683	$ 0.0134	$ 4,031,393.92	$ 15,351,872.58	204,076,501	Nov-11
Dec-11	$ 943,373.22	$ 167,051.05	16,775,200			$ 1,110,424.27	$ 0.0662	$ 0.0100	$ 3,861,448.21	$ 15,181,926.87	193,074,701	Dec-11
Jan-12	$ 943,373.22	$ 167,531.41	31,697,300			$ 1,110,904.63	$ 0.0350	$ 0.0053	$ 3,889,266.80	$ 15,209,745.46	212,310,301	Jan-12
Feb-12	$ 943,373.22	$ 124,352.76	26,100,700			$ 1,067,725.98	$ 0.0409	$ 0.0048	$ 3,799,316.55	$ 15,119,795.21	238,411,000	Feb-12
Mar-12	$ 943,373.22	$ 139,817.99	26,311,200			$ 1,083,191.21	$ 0.0412	$ 0.0053	$ 3,596,932.03	$ 14,917,410.69	259,541,600	Mar-12
Apr-12	$ 943,373.22	$ 199,248.02	34,007,100			$ 1,142,621.24	$ 0.0336	$ 0.0059	$ 3,107,786.46	$ 14,428,265.12	272,059,400	Apr-12
May-12	$ 943,373.22	$ 217,327.43	42,100,200			$ 1,160,700.65	$ 0.0276	$ 0.0052	$ 2,507,142.73	$ 13,827,621.39	277,108,200	May-12
Jun-12	$ 943,373.22	$ 117,443.78	37,933,400			$ 1,060,817.00	$ 0.0280	$ 0.0031	$ 2,278,013.59	$ 13,598,492.25	292,392,700	Jun-12
Jul-12	$ 943,373.22	$ 433,297.81	25,061,300			$ 1,376,671.03	$ 0.0549	$ 0.0173	$ 2,292,721.24	$ 13,613,199.90	286,926,500	Jul-12
Aug-12	$ 943,373.22	$ 263,832.44	9,645,400			$ 1,207,205.66	$ 0.1252	$ 0.0274	$ 2,402,614.33	$ 13,723,092.99	283,399,600	Aug-12
Sep-12	$ 943,373.22	$ 314,939.08	6,162,600			$ 1,258,312.30	$ 0.2042	$ 0.0511	$ 2,511,712.88	$ 13,832,191.54	281,683,200	Sep-12
Oct-12	$ 943,373.22	$ 186,972.79	8,320,200			$ 1,130,346.01	$ 0.1359	$ 0.0225	$ 2,562,041.46	$ 13,882,520.12	281,296,600	Oct-12
Nov-12	$ 943,373.22	$ 128,600.63	27,993,100			$ 1,071,973.85	$ 0.0383	$ 0.0046	$ 2,460,415.19	$ 13,780,893.85	292,107,700	Nov-12
Dec-12	$ 943,373.22	$ 330,786.41	29,934,000			$ 1,274,159.63	$ 0.0426	$ 0.0111	$ 2,624,150.55	$ 13,944,629.21	305,266,500	Dec-12
Jan-13	$ 943,373.22	$ 130,336.21	17,234,900			$ 1,073,709.43	$ 0.0623	$ 0.0076	$ 2,586,955.35	$ 13,907,434.01	290,804,100	Jan-13
Feb-13	$ 943,373.22	$ 140,345.97	16,774,800			$ 1,083,719.19	$ 0.0646	$ 0.0084	$ 2,602,948.56	$ 13,923,427.22	281,478,200	Feb-13
Mar-13	$ 943,373.22	$ 132,844.30	24,023,700			$ 1,076,217.52	$ 0.0448	$ 0.0055	$ 2,595,974.87	$ 13,916,453.53	279,190,700	Mar-13
Apr-13	$ 943,373.22	$ 131,494.34	38,173,500			$ 1,074,867.56	$ 0.0282	$ 0.0034	$ 2,528,221.19	$ 13,848,699.85	283,357,100	Apr-13
May-13	$ 943,373.22	$ 210,139.33	40,931,500			$ 1,153,512.55	$ 0.0282	$ 0.0051	$ 2,521,033.09	$ 13,841,511.75	282,188,400	May-13
Jun-13	$ 943,373.22	$ 119,252.13	28,228,300			$ 1,062,625.35	$ 0.0376	$ 0.0042	$ 2,522,841.44	$ 13,843,320.10	272,483,300	Jun-13
Jul-13	$ 943,373.22	$ 428,450.51	13,381,900			$ 1,371,823.73	$ 0.1025	$ 0.0320	$ 2,517,994.14	$ 13,838,472.80	260,803,900	Jul-13
Aug-13	$ 943,373.22	$ 412,349.73	6,885,000			$ 1,355,722.95	$ 0.1969	$ 0.0599	$ 2,666,511.43	$ 13,986,990.09	258,043,500	Aug-13
Sep-13	$ 943,373.22	$ 579,281.00	8,737,900			$ 1,522,654.22	$ 0.1743	$ 0.0663	$ 2,930,853.35	$ 14,251,332.01	260,618,800	Sep-13
Oct-13	$ 943,373.22	$ 137,658.64	15,289,900			$ 1,081,031.86	$ 0.0707	$ 0.0090	$ 2,881,539.20	$ 14,202,017.86	267,588,500	Oct-13
Nov-13	$ 629,200.18	$ 131,881.70	20,190,900			$ 761,081.88	$ 0.0377	$ 0.0065	$ 2,884,820.27	$ 13,891,125.90	259,786,300	Nov-13
Dec-13	$ 629,200.18	$ 275,790.63	22,835,500			$ 904,990.81	$ 0.0396	$ 0.0121	$ 2,829,824.49	$ 13,521,957.08	252,687,800	Dec-13
Jan-14	$ 629,200.18	$ 225,231.69	26,242,600			$ 854,431.87	$ 0.0326	$ 0.0086	$ 2,924,719.97	$ 13,302,679.52	261,695,500	Jan-14
Feb-14	$ 629,200.18	$ 298,563.75	25,136,900			$ 927,763.93	$ 0.0369	$ 0.0119	$ 3,082,937.75	$ 13,146,724.26	270,057,600	Feb-14
Mar-14	$ 629,200.18	$ 206,931.46	39,313,800			$ 836,131.64	$ 0.0213	$ 0.0053	$ 3,157,024.91	$ 12,906,638.39	285,347,700	Mar-14
Apr-14	$ 629,200.18	$ 216,950.46	31,054,800			$ 846,150.64	$ 0.0272	$ 0.0070	$ 3,242,481.03	$ 12,677,921.47	278,229,000	Apr-14

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
May-14	$ 629,200.18	$ 167,473.93	42,504,400			$ 796,674.11	$ 0.0187	$ 0.0039	$ 3,199,815.63	$ 12,321,083.03	279,801,900	May-14
Jun-14	$ 629,200.18	$ 424,253.90	24,591,500			$ 1,053,454.08	$ 0.0428	$ 0.0173	$ 3,504,817.40	$ 12,311,911.77	276,165,100	Jun-14
Jul-14	$ 629,200.18	$ 370,849.27	15,226,400			$ 1,000,049.45	$ 0.0657	$ 0.0244	$ 3,447,216.16	$ 11,940,137.49	278,009,600	Jul-14
Aug-14	$ 629,200.18	$ 255,269.92	8,128,000			$ 884,470.10	$ 0.1088	$ 0.0314	$ 3,290,136.35	$ 11,468,884.64	279,252,600	Aug-14
Sep-14	$ 629,200.18	$ 299,341.81	5,913,400			$ 928,541.99	$ 0.1570	$ 0.0506	$ 3,010,197.16	$ 10,874,772.41	276,428,100	Sep-14
Oct-14	$ 629,200.18	$ 243,382.42	10,665,300			$ 872,582.60	$ 0.0818	$ 0.0228	$ 3,115,920.94	$ 10,666,323.16	271,803,500	Oct-14
Nov-14	$ 629,200.18	$ 167,576.76	25,099,600			$ 796,776.94	$ 0.0317	$ 0.0067	$ 3,151,616.00	$ 10,702,018.22	276,712,200	Nov-14
Dec-14	$ 629,200.18	$ 450,550.78	36,338,800			$ 1,079,750.96	$ 0.0297	$ 0.0124	$ 3,326,376.15	$ 10,876,778.37	290,215,500	Dec-14
Jan-15	$ 629,200.18	$ 215,745.91	36,801,900	287,500	36,514,400	$ 844,946.09	$ 0.0230	$ 0.0059	$ 3,316,890.37	$ 10,867,292.59	300,774,800	Jan-15
Feb-15	$ 629,200.18	$ 142,036.17	27,686,300	301,500	27,384,800	$ 771,236.35	$ 0.0279	$ 0.0051	$ 3,160,362.79	$ 10,710,765.01	303,324,200	Feb-15
Mar-15	$ 629,200.18	$ 205,147.93	23,699,600	261,900	23,437,700	$ 834,348.11	$ 0.0352	$ 0.0087	$ 3,158,579.26	$ 10,708,981.48	287,710,000	Mar-15
Apr-15	$ 629,200.18	$ 198,207.83	16,893,500	215,700	16,677,800	$ 827,408.01	$ 0.0490	$ 0.0117	$ 3,139,836.63	$ 10,690,238.85	273,548,700	Apr-15
May-15	$ 629,200.18	$ 220,585.46	12,955,200	181,500	12,773,700	$ 849,785.64	$ 0.0656	$ 0.0170	$ 3,192,948.16	$ 10,743,350.38	243,999,500	May-15
Jun-15	$ 629,200.18	$ 640,301.01	8,066,000	108,300	7,957,700	$ 1,269,501.19	$ 0.1574	$ 0.0794	$ 3,408,995.27	$ 10,959,397.49	227,474,000	Jun-15
Jul-15	$ 629,200.18	$ 258,907.68	5,702,600	57,900	5,644,700	$ 888,107.86	$ 0.1557	$ 0.0454	$ 3,297,053.68	$ 10,847,455.90	217,950,200	Jul-15
Aug-15	$ 629,200.18	$ 258,786.14	2,165,100	17,700	2,147,400	$ 887,986.32	$ 0.4101	$ 0.1195	$ 3,300,569.90	$ 10,850,972.12	211,987,300	Aug-15
Sep-15	$ 629,200.18	$ 325,507.27	413,000	3,200	409,800	$ 954,707.45	$ 2.3116	$ 0.7882	$ 3,326,735.36	$ 10,877,137.58	206,486,900	Sep-15
Oct-15	$ 629,200.18	$ 362,593.11	1	1	-	$ 991,793.29	$ 991,793.2947	$ 362,593.1100	$ 3,445,946.05	$ 10,996,348.27	195,821,601	Oct-15
Nov-15	$ 629,200.18	$ 480,719.16	23,606,100	208,600	23,397,500	$ 1,109,919.34	$ 0.0470	$ 0.0204	$ 3,759,088.45	$ 11,309,490.67	194,328,101	Nov-15
Dec-15	$ 629,200.18	$ 359,243.56	32,632,400	300,800	32,331,600	$ 988,443.74	$ 0.0303	$ 0.0110	$ 3,667,781.23	$ 11,218,183.45	190,621,701	Dec-15
Jan-16	$ 629,200.18	$ 229,301.42	28,649,500	323,200	28,326,300	$ 858,501.60	$ 0.0300	$ 0.0080	$ 3,681,336.74	$ 11,231,738.96	182,469,301	Jan-16
Feb-16	$ 629,200.18	$ 353,693.03	34,777,400	317,100	34,460,300	$ 982,893.21	$ 0.0283	$ 0.0102	$ 3,892,993.60	$ 11,443,395.82	189,560,401	Feb-16
Mar-16	$ 629,200.18	$ 367,139.74	38,198,400	342,200	37,856,200	$ 996,339.92	$ 0.0261	$ 0.0096	$ 4,054,985.41	$ 11,605,387.63	204,059,201	Mar-16
Apr-16	$ 629,200.18	$ 324,963.66	34,075,900	301,700	33,774,200	$ 954,163.84	$ 0.0280	$ 0.0095	$ 4,181,741.24	$ 11,732,143.46	221,241,601	Apr-16
May-16	$ 629,200.18	$ 260,378.31	24,546,300	247,100	24,299,200	$ 889,578.49	$ 0.0362	$ 0.0106	$ 4,221,534.09	$ 11,771,936.31	232,832,701	May-16
Jun-16	$ 629,200.18	$ 401,704.92	17,140,500	195,400	16,945,100	$ 1,030,905.10	$ 0.0601	$ 0.0234	$ 3,982,938.00	$ 11,533,340.22	241,907,201	Jun-16
Jul-16	$ 629,200.18	$ 308,009.14	9,167,000	105,800	9,061,200	$ 937,209.32	$ 0.1022	$ 0.0336	$ 4,032,039.46	$ 11,582,441.68	245,371,601	Jul-16
Aug-16	$ 629,200.18	$ 373,114.10	33,200	300	32,900	$ 1,002,314.28	$ 30.1902	$ 11.2384	$ 4,146,367.42	$ 11,696,769.64	243,239,701	Aug-16
Sep-16	$ 629,200.18	$ 772,091.22	1		1	$ 1,401,291.40	$ 1,401,291.4047	$ 772,091.2200	$ 4,592,951.37	$ 12,143,353.59	242,826,702	Sep-16
Oct-16	$ 629,200.18	$ 351,345.08	19,172,500	164,400	19,008,100	$ 980,545.26	$ 0.0511	$ 0.0183	$ 4,581,703.34	$ 12,132,105.56	261,999,201	Oct-16
Nov-16	$ 629,200.18	$ 324,074.87	29,170,200	271,700	28,898,500	$ 953,275.05	$ 0.0327	$ 0.0111	$ 4,425,059.05	$ 11,975,461.27	267,563,301	Nov-16
Dec-16	$ 629,200.18	$ 284,443.20	18,451,500	272,000	18,179,500	$ 913,643.38	$ 0.0495	$ 0.0154	$ 4,350,258.69	$ 11,900,660.91	253,382,401	Dec-16
Jan-17	$ 629,200.18	$ 212,030.93	17,616,600	275,100	17,341,500	$ 841,231.11	$ 0.0478	$ 0.0120	$ 4,332,988.20	$ 11,883,390.42	242,349,501	Jan-17
Feb-17	$ 629,200.18	$ 212,358.70	30,566,900	198,200	30,368,700	$ 841,558.88	$ 0.0275	$ 0.0069	$ 4,191,653.87	$ 11,742,056.09	238,139,001	Feb-17
Mar-17	$ 629,200.18	$ 212,998.13	38,860,900	427,300	38,433,600	$ 842,198.31	$ 0.0217	$ 0.0055	$ 4,037,512.26	$ 11,587,914.48	238,801,501	Mar-17
Apr-17	$ 629,200.18	$ 319,558.69	33,932,500	290,300	33,642,200	$ 948,758.87	$ 0.0280	$ 0.0094	$ 4,032,107.29	$ 11,582,509.51	238,658,101	Apr-17
May-17	$ 629,200.18	$ 349,294.58	45,145,900	343,700	44,802,200	$ 978,494.76	$ 0.0217	$ 0.0077	$ 4,121,023.56	$ 11,671,425.78	259,257,701	May-17
Jun-17	$ 629,200.18	$ 554,361.69	37,232,400	(1,243,200)	38,475,600	$ 1,183,561.87	$ 0.0318	$ 0.0149	$ 4,273,680.33	$ 11,824,082.55	279,349,601	Jun-17
Jul-17	$ 629,200.18	$ 317,794.51	14,703,200	1,698,700	13,004,500	$ 946,994.69	$ 0.0644	$ 0.0216	$ 4,283,465.70	$ 11,833,867.92	284,885,801	Jul-17
Aug-17	$ 629,200.18	$ 261,316.74	6,577,400	79,600	6,497,800	$ 890,516.92	$ 0.1354	$ 0.0397	$ 4,171,668.34	$ 11,722,070.56	291,430,001	Aug-17
Sep-17	$ 629,200.18	$ 614,481.82	578,300	4,400	573,900	$ 1,243,682.00	$ 2.1506	$ 1.0626	$ 4,014,058.94	$ 11,564,461.16	292,008,300	Sep-17
Oct-17	$ 629,200.18	$ 181,113.89	10,907,900	110,000	10,797,900	$ 810,314.07	$ 0.0743	$ 0.0166	$ 3,843,827.75	$ 11,394,229.97	283,743,700	Oct-17
Nov-17	$ 629,200.18	$ 418,962.27	24,663,500	256,900	24,406,600	$ 1,048,162.45	$ 0.0425	$ 0.0170	$ 3,938,715.15	$ 11,489,117.37	279,237,000	Nov-17
Dec-17	$ 629,200.18	$ 387,322.99	24,934,200	279,000	24,655,200	$ 1,016,523.17	$ 0.0408	$ 0.0155	$ 4,041,594.94	$ 11,591,997.16	285,719,700	Dec-17
Jan-18	$ 629,200.18	$ 182,925.93	39,338,300	628,800	38,709,500	$ 812,126.11	$ 0.0206	$ 0.0047	$ 4,012,489.94	$ 11,562,892.16	307,441,400	Jan-18

CFP Costs

Public Utility District #1 of Lewis County

Year	Monthly Debt Service	Monthly O&M	Monthly KWH	Plant Use KWH	Net Gen KWH	Monthly Total Cost	Monthly Cost/Kwh	Monthly O&M Cost/Kwh	Prior 12 Months O & M Cost	Prior 12 Months Total Cost	Prior 12 Months KWH	Date2
Feb-18	$ 629,200.18	$ 314,908.78	28,173,900	113,800	28,060,100	$ 944,108.96	$ 0.0335	$ 0.0112	$ 4,115,040.02	$ 11,665,442.24	305,048,400	Feb-18
Mar-18	$ 629,200.18	$ 224,732.88	16,839,500	74,500	16,765,000	$ 853,933.06	$ 0.0507	$ 0.0133	$ 4,126,774.77	$ 11,677,176.99	283,027,000	Mar-18
Apr-18	$ 629,200.18	$ 328,089.72	33,489,900	286,700	33,203,200	$ 957,289.90	$ 0.0286	$ 0.0098	$ 4,135,305.80	$ 11,685,708.02	282,584,400	Apr-18
May-18	$ 629,200.18	$ 270,225.73	41,197,400	300,100	40,897,300	$ 899,425.91	$ 0.0218	$ 0.0066	$ 4,056,236.95	$ 11,606,639.17	278,635,900	May-18
Jun-18	$ 629,200.18	$ 582,364.35	19,516,500	1,147,700	18,368,800	$ 1,211,564.53	$ 0.0621	$ 0.0298	$ 4,084,239.61	$ 11,634,641.83	260,920,000	Jun-18
Jul-18	$ 629,200.18	$ 317,806.18	7,336,400	(815,600)	8,152,000	$ 947,006.36	$ 0.1291	$ 0.0433	$ 4,084,251.28	$ 11,634,653.50	253,553,200	Jul-18
Aug-18	$ 629,200.18	$ 265,245.74	3,825,800	29,600	3,796,200	$ 894,445.92	$ 0.2338	$ 0.0693	$ 4,088,180.28	$ 11,638,582.50	250,801,600	Aug-18
Sep-18	$ 629,200.18	$ 633,318.20	1	1	-	$ 1,262,518.38	$ 1,262,518.38	$ 633,318.20	$ 4,107,016.66	$ 11,657,418.88	250,223,301	Sep-18
Oct-18	$ 629,200.18	$ 359,119.03	2,311,900	28,200	2,283,700	$ 988,319.21	$ 0.4275	$ 0.1553	$ 4,285,021.80	$ 11,835,424.02	241,627,301	Oct-18
Nov-18	$ 629,200.18	$ 302,632.22	15,600,100	172,000	15,428,100	$ 931,832.40	$ 0.0597	$ 0.0194	$ 4,168,691.75	$ 11,719,093.97	232,563,901	Nov-18
Dec-18	$ 629,200.18	$ 238,484.97	21,437,500	229,200	21,208,300	$ 867,685.15	$ 0.0405	$ 0.0111	$ 4,019,853.73	$ 11,570,255.95	229,067,201	Dec-18
Jan-19	$ 629,200.18	$ 160,999.08	23,787,000	244,900	23,542,100	$ 790,199.26	$ 0.0332	$ 0.0068	$ 3,997,926.88	$ 11,548,329.10	213,515,901	Jan-19
Feb-19	$ 629,200.18	$ 242,655.64	12,380,800	216,500	12,164,300	$ 871,855.82	$ 0.0704	$ 0.0196	$ 3,925,673.74	$ 11,476,075.96	197,722,801	Feb-19
Mar-19	$ 629,200.18	$ 223,258.87	10,812,600	130,900	10,681,700	$ 852,459.05	$ 0.0788	$ 0.0206	$ 3,924,199.73	$ 11,474,601.95	191,695,901	Mar-19
Apr-19	$ 629,200.18	$ 254,390.74	31,724,900	249,600	31,475,300	$ 883,590.92	$ 0.0279	$ 0.0080	$ 3,850,500.75	$ 11,400,902.97	189,930,901	Apr-19
May-19	$ 629,200.18	$ 329,143.62	28,824,500	236,200	28,588,300	$ 958,343.80	$ 0.0332	$ 0.0114	$ 3,909,418.64	$ 11,459,820.86	177,558,001	May-19
Jun-19	$ 629,200.18	$ 458,875.31	15,588,300	176,300	15,412,000	$ 1,088,075.49	$ 0.0698	$ 0.0294	$ 3,785,929.60	$ 11,336,331.82	173,629,801	Jun-19
Jul-19	$ 629,200.18	$ 511,828.74	7,686,900	99,600	7,587,300	$ 1,141,028.92	$ 0.1484	$ 0.0666	$ 3,979,952.16	$ 11,530,354.38	173,980,301	Jul-19
Aug-19	$ 629,200.18	$ 263,646.75	4,099,900	(460,600)	4,560,500	$ 892,846.93	$ 0.2178	$ 0.0643	$ 3,978,353.17	$ 11,528,755.39	174,254,401	Aug-19
Sep-19	$ 629,200.18	$ 362,340.23	1,807,600	517,300	1,290,300	$ 991,540.41	$ 0.5485	$ 0.2005	$ 3,707,375.20	$ 11,257,777.42	176,062,000	Sep-19
Oct-19	$ 629,200.18	$ 348,964.00	8,245,600	84,500	8,161,100	$ 978,164.18	$ 0.1186	$ 0.0423	$ 3,697,220.17	$ 11,247,622.39	181,995,700	Oct-19
Nov-19	$ 629,200.18	$ 327,493.00	5,171,400	79,600	5,091,800	$ 956,693.18	$ 0.1850	$ 0.0633	$ 3,722,080.95	$ 11,272,483.17	171,567,000	Nov-19
Dec-19	$ 629,200.18	$ 433,722.00	16,945,400	250,300	16,695,100	$ 1,062,922.18	$ 0.0627	$ 0.0256	$ 3,917,317.98	$ 11,467,720.20	167,074,900	Dec-19
Jan-20	$ 629,200.18	$ 317,553.00	39,442,500	316,900	39,125,600	$ 946,753.18	$ 0.0240	$ 0.0081	$ 4,073,871.90	$ 11,624,274.12	182,730,400	Jan-20
Feb-20	$ 629,200.18	$ 356,473.00	28,568,700	234,200	28,334,500	$ 985,673.18	$ 0.0345	$ 0.0125	$ 4,187,689.26	$ 11,738,091.48	198,918,300	Feb-20
Mar-20	$ 629,200.18	$ 327,753.00	16,415,200	231,600	16,183,600	$ 956,953.18	$ 0.0583	$ 0.0200	$ 4,292,183.39	$ 11,842,585.61	204,520,900	Mar-20
Apr-20	$ 629,200.18	$ 443,358.00	25,496,900	225,400	25,271,500	$ 1,072,558.18	$ 0.0421	$ 0.0174	$ 4,481,150.65	$ 12,031,552.87	198,292,900	Apr-20
May-20	$ 629,200.18	$ 428,528.00	39,432,700	283,800	39,148,900	$ 1,057,728.18	$ 0.0268	$ 0.0109	$ 4,580,535.03	$ 12,130,937.25	208,901,100	May-20
Jun-20	$ 629,200.18	$ 473,609.00	28,665,300	244,200	28,421,100	$ 1,102,809.18	$ 0.0385	$ 0.0165	$ 4,595,268.72	$ 12,145,670.94	221,978,100	Jun-20
Jul-20	$ 629,200.18	$ 366,621.00	13,438,300	146,300	13,292,000	$ 995,821.18	$ 0.0741	$ 0.0273	$ 4,450,060.98	$ 12,000,463.20	227,729,500	Jul-20
Aug-20	$ 629,200.18	$ 434,487.00	5,367,700	129,200	5,238,500	$ 1,063,687.18	$ 0.1982	$ 0.0809	$ 4,620,901.23	$ 12,171,303.45	228,997,300	Aug-20
Sep-20	$ 629,200.18	$ 1,618,449.00	2,388,300	46,700	2,341,600	$ 2,247,649.18	$ 0.9411	$ 0.6777	$ 5,877,010.00	$ 13,427,412.22	229,578,000	Sep-20
Oct-20	$ 629,200.18	$ 207,666.00	3,766,800	20,800	3,746,000	$ 836,866.18	$ 0.2222	$ 0.0551	$ 5,735,712.00	$ 13,286,114.22	225,099,200	Oct-20
Nov-20	$ 629,200.18	$ 253,773.00	19,382,300	117,500	19,264,800	$ 882,973.18	$ 0.0456	$ 0.0131	$ 5,661,992.00	$ 13,212,394.22	239,310,100	Nov-20
Dec-20	$ 629,200.18	$ 721,436.00	23,501,900	219,800	23,282,100	$ 1,350,636.18	$ 0.0575	$ 0.0307	$ 5,949,706.00	$ 13,500,108.22	245,866,600	Dec-20
Jan-21	$ 629,200.18	$ 204,796.00	33,399,700	277,500	33,122,200	$ 833,996.18	$ 0.0250	$ 0.0061	$ 5,836,949.00	$ 13,387,351.22	239,823,800	Jan-21
Feb-21	$ 629,200.18	$ 254,646.00	20,086,400	211,200	19,875,200	$ 883,846.18	$ 0.0440	$ 0.0127	$ 5,735,122.00	$ 13,285,524.22	231,341,500	Feb-21
Mar-21	$ 629,200.18	$ 307,057.00	17,253,300	181,000	17,072,300	$ 936,257.18	$ 0.0543	$ 0.0178	$ 5,714,426.00	$ 13,264,828.22	232,179,600	Mar-21
Apr-21	$ 629,200.18	$ 434,280.00	22,208,500	202,100	22,006,400	$ 1,063,480.18	$ 0.0479	$ 0.0196	$ 5,705,348.00	$ 13,255,750.22	228,891,200	Apr-21

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0721	$ 0.0202
$ 0.0733	$ 0.0198
$ 0.0694	$ 0.0160
$ 0.0649	$ 0.0121
$ 0.0607	$ 0.0083
$ 0.0646	$ 0.0087
$ 0.0655	$ 0.0088
$ 0.0642	$ 0.0086
$ 0.0617	$ 0.0082
$ 0.0579	$ 0.0077
$ 0.0563	$ 0.0074
$ 0.0527	$ 0.0069
$ 0.0496	$ 0.0064
$ 0.0480	$ 0.0062
$ 0.0478	$ 0.0064
$ 0.0469	$ 0.0061
$ 0.0447	$ 0.0061
$ 0.0435	$ 0.0058
$ 0.0448	$ 0.0058
$ 0.0458	$ 0.0058
$ 0.0471	$ 0.0058
$ 0.0484	$ 0.0060
$ 0.0507	$ 0.0066
$ 0.0529	$ 0.0070
$ 0.0553	$ 0.0074
$ 0.0575	$ 0.0077
$ 0.0577	$ 0.0073
$ 0.0591	$ 0.0077
$ 0.0636	$ 0.0080
$ 0.0674	$ 0.0096
$ 0.0647	$ 0.0096
$ 0.0631	$ 0.0098
$ 0.0624	$ 0.0097
$ 0.0615	$ 0.0095
$ 0.0602	$ 0.0089

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0593	$ 0.0084
$ 0.0548	$ 0.0075
$ 0.0503	$ 0.0068
$ 0.0486	$ 0.0066
$ 0.0480	$ 0.0063
$ 0.0478	$ 0.0061
$ 0.0461	$ 0.0053
$ 0.0452	$ 0.0049
$ 0.0476	$ 0.0050
$ 0.0475	$ 0.0049
$ 0.0486	$ 0.0049
$ 0.0469	$ 0.0046
$ 0.0475	$ 0.0051
$ 0.0503	$ 0.0062
$ 0.0548	$ 0.0071
$ 0.0568	$ 0.0075
$ 0.0578	$ 0.0078
$ 0.0569	$ 0.0076
$ 0.0625	$ 0.0082
$ 0.0720	$ 0.0093
$ 0.0744	$ 0.0093
$ 0.0800	$ 0.0103
$ 0.0837	$ 0.0119
$ 0.0906	$ 0.0129
$ 0.0912	$ 0.0124
$ 0.0991	$ 0.0123
$ 0.1019	$ 0.0122
$ 0.1032	$ 0.0128
$ 0.1054	$ 0.0125
$ 0.1104	$ 0.0141
$ 0.0920	$ 0.0113
$ 0.0801	$ 0.0100
$ 0.0735	$ 0.0091
$ 0.0697	$ 0.0085
$ 0.0659	$ 0.0071
$ 0.0620	$ 0.0067
$ 0.0607	$ 0.0066
$ 0.0548	$ 0.0056
$ 0.0539	$ 0.0062
$ 0.0534	$ 0.0059
$ 0.0524	$ 0.0058
$ 0.0525	$ 0.0053
$ 0.0582	$ 0.0058
$ 0.0630	$ 0.0064
$ 0.0628	$ 0.0065

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0627	$ 0.0064
$ 0.0606	$ 0.0064
$ 0.0628	$ 0.0068
$ 0.0663	$ 0.0070
$ 0.0745	$ 0.0084
$ 0.0786	$ 0.0086
$ 0.0803	$ 0.0092
$ 0.0820	$ 0.0099
$ 0.0779	$ 0.0096
$ 0.0723	$ 0.0093
$ 0.0672	$ 0.0087
$ 0.0678	$ 0.0089
$ 0.0670	$ 0.0088
$ 0.0686	$ 0.0090
$ 0.0678	$ 0.0092
$ 0.0654	$ 0.0093
$ 0.0628	$ 0.0087
$ 0.0580	$ 0.0073
$ 0.0569	$ 0.0078
$ 0.0539	$ 0.0072
$ 0.0531	$ 0.0070
$ 0.0524	$ 0.0067
$ 0.0525	$ 0.0069
$ 0.0532	$ 0.0069
$ 0.0555	$ 0.0072
$ 0.0575	$ 0.0072
$ 0.0575	$ 0.0075
$ 0.0594	$ 0.0077
$ 0.0633	$ 0.0082
$ 0.0680	$ 0.0095
$ 0.0683	$ 0.0086
$ 0.0716	$ 0.0095
$ 0.0742	$ 0.0101
$ 0.0731	$ 0.0100
$ 0.0733	$ 0.0098
$ 0.0658	$ 0.0089
$ 0.0613	$ 0.0083
$ 0.0614	$ 0.0085
$ 0.0621	$ 0.0085
$ 0.0580	$ 0.0077
$ 0.0530	$ 0.0070
$ 0.0528	$ 0.0077
$ 0.0527	$ 0.0078
$ 0.0534	$ 0.0085
$ 0.0543	$ 0.0085

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0527	$ 0.0082
$ 0.0521	$ 0.0083
$ 0.0562	$ 0.0089
$ 0.0580	$ 0.0099
$ 0.0533	$ 0.0095
$ 0.0533	$ 0.0098
$ 0.0555	$ 0.0103
$ 0.0579	$ 0.0107
$ 0.0574	$ 0.0101
$ 0.0575	$ 0.0101
$ 0.0579	$ 0.0102
$ 0.0565	$ 0.0100
$ 0.0611	$ 0.0114
$ 0.0624	$ 0.0117
$ 0.0645	$ 0.0122
$ 0.0660	$ 0.0117
$ 0.0719	$ 0.0124
$ 0.0748	$ 0.0122
$ 0.0708	$ 0.0117
$ 0.0611	$ 0.0101
$ 0.0562	$ 0.0098
$ 0.0533	$ 0.0081
$ 0.0542	$ 0.0087
$ 0.0568	$ 0.0090
$ 0.0635	$ 0.0101
$ 0.0644	$ 0.0101
$ 0.0598	$ 0.0094
$ 0.0616	$ 0.0098
$ 0.0617	$ 0.0099
$ 0.0660	$ 0.0103
$ 0.0586	$ 0.0093
$ 0.0625	$ 0.0094
$ 0.0671	$ 0.0103
$ 0.0696	$ 0.0116
$ 0.0700	$ 0.0118
$ 0.0682	$ 0.0114
$ 0.0605	$ 0.0101
$ 0.0582	$ 0.0098
$ 0.0579	$ 0.0099
$ 0.0574	$ 0.0096
$ 0.0571	$ 0.0095
$ 0.0579	$ 0.0098
$ 0.0610	$ 0.0104
$ 0.0601	$ 0.0115
$ 0.0579	$ 0.0106

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0577	$ 0.0107
$ 0.0580	$ 0.0113
$ 0.0573	$ 0.0112
$ 0.0588	$ 0.0124
$ 0.0583	$ 0.0130
$ 0.0628	$ 0.0140
$ 0.0674	$ 0.0153
$ 0.0721	$ 0.0171
$ 0.0753	$ 0.0199
$ 0.0763	$ 0.0221
$ 0.0826	$ 0.0233
$ 0.0787	$ 0.0232
$ 0.0757	$ 0.0216
$ 0.0742	$ 0.0204
$ 0.0737	$ 0.0202
$ 0.0752	$ 0.0198
$ 0.0786	$ 0.0200
$ 0.0716	$ 0.0183
$ 0.0634	$ 0.0159
$ 0.0575	$ 0.0139
$ 0.0530	$ 0.0114
$ 0.0499	$ 0.0090
$ 0.0465	$ 0.0078
$ 0.0474	$ 0.0080
$ 0.0484	$ 0.0085
$ 0.0491	$ 0.0089
$ 0.0494	$ 0.0091
$ 0.0472	$ 0.0084
$ 0.0457	$ 0.0086
$ 0.0478	$ 0.0089
$ 0.0495	$ 0.0092
$ 0.0498	$ 0.0093
$ 0.0489	$ 0.0089
$ 0.0491	$ 0.0089
$ 0.0508	$ 0.0093
$ 0.0531	$ 0.0097
$ 0.0542	$ 0.0103
$ 0.0547	$ 0.0112
$ 0.0531	$ 0.0108
$ 0.0535	$ 0.0111
$ 0.0535	$ 0.0112
$ 0.0508	$ 0.0112
$ 0.0487	$ 0.0114
$ 0.0452	$ 0.0111
$ 0.0456	$ 0.0117

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0440	$ 0.0114
$ 0.0446	$ 0.0127
$ 0.0429	$ 0.0124
$ 0.0411	$ 0.0118
$ 0.0393	$ 0.0109
$ 0.0392	$ 0.0115
$ 0.0387	$ 0.0114
$ 0.0375	$ 0.0115
$ 0.0361	$ 0.0110
$ 0.0353	$ 0.0104
$ 0.0372	$ 0.0110
$ 0.0391	$ 0.0115
$ 0.0440	$ 0.0131
$ 0.0482	$ 0.0150
$ 0.0498	$ 0.0151
$ 0.0512	$ 0.0156
$ 0.0527	$ 0.0161
$ 0.0562	$ 0.0176
$ 0.0582	$ 0.0193
$ 0.0589	$ 0.0192
$ 0.0616	$ 0.0202
$ 0.0604	$ 0.0205
$ 0.0569	$ 0.0199
$ 0.0530	$ 0.0189
$ 0.0506	$ 0.0181
$ 0.0477	$ 0.0165
$ 0.0472	$ 0.0164
$ 0.0481	$ 0.0170
$ 0.0500	$ 0.0189
$ 0.0463	$ 0.0175
$ 0.0448	$ 0.0165
$ 0.0470	$ 0.0172
$ 0.0490	$ 0.0179
$ 0.0493	$ 0.0176
$ 0.0485	$ 0.0169
$ 0.0485	$ 0.0169
$ 0.0450	$ 0.0159
$ 0.0423	$ 0.0153
$ 0.0415	$ 0.0150
$ 0.0402	$ 0.0143
$ 0.0396	$ 0.0137
$ 0.0402	$ 0.0135
$ 0.0411	$ 0.0141
$ 0.0406	$ 0.0141
$ 0.0376	$ 0.0131

CFP Costs

Public Utility District #1 of Lewis County

Prior 12 Months Cost/Kwh	Prior 12 Months O&M Cost/Kwh
$ 0.0382	$ 0.0135
$ 0.0413	$ 0.0146
$ 0.0414	$ 0.0146
$ 0.0417	$ 0.0146
$ 0.0446	$ 0.0157
$ 0.0459	$ 0.0161
$ 0.0464	$ 0.0163
$ 0.0466	$ 0.0164
$ 0.0490	$ 0.0177
$ 0.0504	$ 0.0179
$ 0.0505	$ 0.0175
$ 0.0541	$ 0.0187
$ 0.0580	$ 0.0199
$ 0.0599	$ 0.0205
$ 0.0600	$ 0.0203
$ 0.0645	$ 0.0220
$ 0.0653	$ 0.0218
$ 0.0663	$ 0.0229
$ 0.0662	$ 0.0228
$ 0.0639	$ 0.0211
$ 0.0618	$ 0.0203
$ 0.0657	$ 0.0217
$ 0.0686	$ 0.0234
$ 0.0636	$ 0.0223
$ 0.0590	$ 0.0211
$ 0.0579	$ 0.0210
$ 0.0607	$ 0.0226
$ 0.0581	$ 0.0219
$ 0.0547	$ 0.0207
$ 0.0527	$ 0.0195
$ 0.0532	$ 0.0202
$ 0.0585	$ 0.0256
$ 0.0590	$ 0.0255
$ 0.0552	$ 0.0237
$ 0.0549	$ 0.0242
$ 0.0558	$ 0.0243
$ 0.0574	$ 0.0248
$ 0.0571	$ 0.0246
$ 0.0579	$ 0.0249

						Direct Cost				Loaded Cost			
						FY17	FY18	FY19		FY17	FY18	FY19	
	Resource	MW Capacity	aMW Energy	Strategic Class	Operator	O&M + Cap-Related Cost/MWh	O&M + Cap-Related Cost/MWh	O&M + Cap-Related Cost/MWh	Average	Fully Loaded Cost/ MWh	Fully Loaded Cost/ MWh	Fully Loaded Cost/ MWh	Average
	Grand Coulee	6,735	2,497	Main Stem Col.	Reclamation	$8.53	$8.21	$8.44	$8.39	$19.79	$19.74	$19.40	$19.64
	Chief Joseph	2,614	1,387	Main Stem Col.	Corps	$5.00	$4.90	$5.44	$5.12	$14.39	$14.42	$14.49	$14.43
	McNary	1,120	575	Main Stem Col.	Corps	$8.15	$7.60	$8.15	$7.97	$18.08	$17.57	$17.63	$17.76
	John Day	2,480	991	Main Stem Col.	Corps	$6.07	$5.54	$5.33	$5.65	$16.96	$16.53	$15.76	$16.42
	The Dalles	2,052	773	Main Stem Col.	Corps	$6.20	$5.87	$6.32	$6.13	$17.54	$17.29	$17.17	$17.33
	Bonneville	1,195	513	Main Stem Col.	Corps	$16.49	$14.01	$14.42	$14.98	$28.26	$25.70	$25.55	$26.51
	Dworshak	465	214	Headwater	Corps	$12.96	$13.33	$13.46	$13.25	$23.27	$23.71	$23.33	$23.44
	Lower Granite	930	272	Lower Snake	Corps	$13.30	$12.36	$10.38	$12.01	$29.72	$29.04	$25.92	$28.23
	Little Goose	930	263	Lower Snake	Corps	$9.27	$11.78	$8.98	$10.01	$26.40	$29.03	$25.04	$26.82
	Lower Monumental	930	278	Lower Snake	Corps	$9.37	$8.46	$6.54	$8.12	$26.43	$25.85	$22.77	$25.02
	Ice Harbor	693	211	Lower Snake	Corps	$9.74	$8.92	$8.98	$9.21	$28.20	$27.79	$26.52	$27.51
	Libby	605	238	Headwater	Corps	$13.09	$11.89	$11.61	$12.20	$23.73	$22.52	$21.72	$22.66
	Hungry Horse	428	113	Headwater	Reclamation	$11.56	$12.09	$11.35	$11.67	$23.31	$23.83	$22.50	$23.21
	Albeni Falls	49	24	Area Support	Corps	$54.96	$59.25	$58.49	$57.57	$65.92	$70.15	$68.99	$68.35
	Detroit	115	46	Area Support	Corps	$17.55	$16.06	$17.16	$16.92	$35.55	$33.42	$33.84	$34.27
	Big Cliff	21	13	Area Support	Corps	$28.18	$26.22	$30.39	$28.26	$43.27	$41.00	$44.70	$42.99
	Green Peter	92	30	Area Support	Corps	$17.50	$15.79	$15.13	$16.14	$38.95	$36.27	$34.86	$36.69
	Foster	23	12	Area Support	Corps	$28.22	$26.47	$25.88	$26.85	$45.90	$43.67	$42.55	$44.04
	Lookout Point	138	37	Area Support	Corps	$26.10	$24.84	$24.75	$25.23	$48.74	$46.49	$45.57	$46.93
	Dexter	17	10	Area Support	Corps	$52.02	$54.84	$54.02	$53.63	$68.84	$71.40	$70.09	$70.11
	Cougar	28	17	Area Support	Corps	$24.60	$25.33	$22.59	$24.17	$57.05	$55.65	$52.02	$54.91
	Hills Creek	34	18	Area Support	Corps	$23.44	$21.03	$21.37	$21.95	$55.51	$51.10	$50.49	$52.36
	Lost Creek	56	36	Area Support	Corps	$10.87	$12.83	$12.95	$12.22	$19.52	$21.77	$21.51	$20.93
	Palisades	176	74	Area Support	Reclamation	$18.54	$18.29	$18.74	$18.52	$30.34	$30.16	$30.05	$30.19
	Minidoka	28	22	Local Support	Reclamation	$35.86	$37.97	$40.88	$38.23	$44.24	$46.45	$49.05	$46.58
	Anderson Ranch	40	18	Local Support	Reclamation	$19.54	$19.85	$18.42	$19.27	$31.96	$32.37	$30.44	$31.59
	Boise Diversion	3	2	Local Support	Reclamation	$50.10	$50.60	$50.09	$50.26	$71.75	$72.55	$72.13	$72.15
	Black Canyon	10	9	Local Support	Reclamation	$37.30	$37.67	$37.29	$37.42	$47.82	$48.36	$47.72	$47.96
	Roza	13	10	Local Support	Reclamation	$22.38	$21.57	$21.71	$21.89	$32.49	$31.78	$31.66	$31.98
	Chandler	12	9	Local Support	Reclamation	$23.59	$22.76	$22.93	$23.09	$33.71	$32.98	$32.90	$33.20
	Green Springs	18	6	Local Support	Reclamation	$30.43	$32.76	$33.88	$32.36	$41.53	$43.94	$44.83	$43.43
	Columbia Gen Station	1169	937		Energy Northwest	$49.85	$46.46	$51.84	$49.38	$57.40	$54.29	$59.32	$57.00
	BPA Energy Efficiency		1366.3			$15.90	$16.39	$13.72	$15.34	$18.49	$19.10	$16.13	$17.91
	Tier 2 Rates - Purchases					$0.00	$0.00	$0.00	$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Short Term Purchases					$0.00	$0.00	$0.00	$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Renewables	0	57.9			$63.64	$68.40	$70.71	$67.58	$63.91	$68.67	$70.99	$67.85
	Cowlitz Falls	70	27.7		Lewis County PUD	$46.14	$46.63	$49.19	$47.32	$46.69	$47.19	$49.77	$47.88
	Other LT Gen Contracts	430	295			$2.84	$2.64	$2.71	$2.73	$2.89	$2.69	$2.76	$2.78
	Not Allocable		0			$0.00	$0.00	$0.00	$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

From: Sonoda,Cherie D (BPA) - PGAC-RICHLAND

Sent: Tue Nov 12 07:49:19 2019

To: Cook,Joel D (BPA) - P-6; Connolly,Kieran P (BPA) - PG-5; Todd,Wayne A (BPA) - PGA-6

Cc: Carlson,Debbie (BPA) - PGAC-RICHLAND

Subject: Overview Cowlitz Falls Dam

Importance: Normal

Attachments: CFP 11_8_19 summary.pptx

Good Morning,

Please find the attached document that gives an overview of the Cowlitz Falls Project to aid in our discussions today.

Summary

- Commercial Ops: June 1994
- Two 35MW Kaplan turbines
- ~ 223,000 MWH/year

- Five year ave. cost of power ~$15/MWhr

Best Regards,

Cherie

AUTHENTICATED COPY

Contract No. DE-MS79-91BP93212
Procurement No. 76237

AMENDATORY CONTRACT FOR
POWER PURCHASE
executed by the
UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
acting by and through the
BONNEVILLE POWER ADMINISTRATION

and

PUBLIC UTILITY DISTRICT NO. 1 OF LEWIS COUNTY, WASHINGTON
(Cowlitz Falls Project)

Index to Sections

This Amendatory Contract for Power Purchase (Contract), executed May 23 1991, by the UNITED STATES OF AMERICA (Government), Department of Energy, acting by and through the BONNEVILLE POWER ADMINISTRATION (Bonneville), and PUBLIC UTILITY DISTRICT NO. 1 OF LEWIS COUNTY, WASHINGTON (Lewis), a public utility district organized and existing under the laws of the State of Washington (the Parties);

W I T N E S S E T H:

WHEREAS, Bonneville is authorized and obligated to acquire sufficient power and energy to meet the electric power requirements placed on Bonneville, consistent with the resource priorities of the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act); and

WHEREAS, Lewis is organized under the laws of State of Washington and is authorized to construct, acquire and operate works, plants, systems and facilities for the generation, conservation and transmission of electric power and energy and to enter into contracts for the disposition of electric power and energy produced thereby; and

WHEREAS, Lewis and Bonneville have executed a power sales contract (Contract No. DE-MS79-81BP90503, which as the same may be amended or replaced is hereinafter called "Bonneville power sales contract"), and a Residential Purchase and Sale Agreement (Contract No. DE-MS79-81BP90665, which as the same may be amended or replaced is hereinafter called "Residential Exchange Agreement"); and

WHEREAS, this Contract (Contract No. DE-MS79-91BP93212) amends and restates the Power Purchase Contract (Contract No. DE-MS79-90BP93106) executed by and between the Parties on January 28, 1991, and is intended to and shall represent the full and entire agreement of the Parties, notwithstanding any prior written or oral agreements, including the Power Purchase Contract; and

WHEREAS, the acquisition of the Project Output by Bonneville pursuant to this Contract will serve to satisfy Lewis' ongoing obligation, pursuant to Section 5 of the Bonneville power sales contract, to either serve its load with resources it develops, or to provide resources to Bonneville; and

WHEREAS, Lewis has obtained a license to construct a hydroelectric project on the Cowlitz River, known as the Cowlitz Falls Project (Project), which is a renewable resource having the highest priority for acquisition by Bonneville after conservation; and

WHEREAS, the Parties attempted in good faith, and elected not to obtain a letter of credit or other credit enhancement to secure initial Cowlitz Falls Bonds as contemplated in the Power Purchase Contract; and

WHEREAS, under the terms as hereby amended and restated in this Contract, Bonneville has determined that the acquisition of the Project Output by Bonneville remains cost-effective, and continues to meet all other requirements applicable to such acquisition under the Northwest Power Act or other law; and

WHEREAS, the Parties expect that Lewis will finance construction of the Project through the issuance of Cowlitz Falls Bonds, and may from time to time issue Cowlitz Falls Bonds for other Project purposes; and

WHEREAS, Bonneville is authorized and has agreed to pay to or on behalf of Lewis amounts equal to the Project Power Costs including Annual Debt Service on such Cowlitz Falls Bonds for the term of this Contract; and

WHEREAS, Bonneville is authorized by law to dispose of electric power and energy generated at various Federal hydroelectric projects in the Pacific Northwest or acquired from other resources; to construct and operate transmission facilities; to provide transmission and other services; and to enter into agreements to carry out such authority; and

WHEREAS, Bonneville will pay to Lewis an amount equal to Project Power Costs and thus has a direct interest in actions and decisions that will affect Project Power Costs; and

WHEREAS, this Contract establishes Bonneville's rights to oversee and participate in actions associated with construction, financing and operation of the Project; and

WHEREAS, on May 15, 1990, the Parties hereto executed an Option Agreement for the purchase of the Project Output of the Cowlitz Falls Project by Bonneville; and

WHEREAS, Bonneville's obligations hereunder are not, nor shall they be construed to be, general obligations of the United States, nor are they

intended to be or are they secured by the full faith and credit of the United States; and

WHEREAS, Bonneville expects to enter into a payment agreement with the Trustee for the Cowlitz Falls Bonds to provide timely payment of Annual Debt Service in the event that Bonneville's payment obligation hereunder is held to be unenforceable in any respect; and

WHEREAS, the Parties now wish to conclude the sale of the Project Output, as described in this Contract,

NOW, THEREFORE, the Parties hereto agree as follows:

1. Definitions.

(a) "Actual Initial Construction Costs" means Initial Construction Costs less any Recovery Payments.

(b) "Annual Availability Factor" means the percentage factor calculated by dividing the number of hours during an Operating Year the Project was available to generate electricity by the total number of hours in that Operating Year.

(c) "Annual Debt Service" means the sum of amounts, required to be paid in any year to pay:

(1) the interest due in such year on all outstanding Cowlitz Falls Bonds, excluding interest paid from the proceeds of sale of Cowlitz Falls Bonds or other bonds; and

(2) the principal of all outstanding Cowlitz Falls Bonds due in such year, including sinking funds to amortize Cowlitz Falls Bonds that are term bonds, if any, during such year; and

(3) amounts required to pay premiums for redeeming Cowlitz Falls Bonds, prior to their scheduled maturity.

(d) "Annual Operating Budget" means the budget mutually agreed to by the Parties which establishes the amount and due dates for the payment of an amount equal to Project Power Costs for each Operating Year during the Term.

(e) "Bond Resolution" means the Resolution of the Commissioners of Lewis creating the Cowlitz Falls Hydroelectric Project as a separate system of Lewis, and providing a plan and system for the acquisition and construction for additions, betterments, improvements and extensions, creating an issue of Cowlitz Falls Hydroelectric Project Revenue Bonds, fixing the form and covenants of said bonds, and establishing certain funds and accounts, and all resolutions supplementing or amending such Bond Resolution.

(f) "Commercial Operation Date" means the date, following a reasonable period of testing, when the Project Engineer

certifies that the Project is available for and capable of continuous operation on a commercial basis.

(g) "Construction Fund" means the Cowlitz Falls Hydroelectric Project Construction Fund created by the Bond Resolution.

(h) "Construction Notice to Proceed" means the written notice given by Lewis to the contractors to commence Initial Project Construction.

(i) "Cowlitz Falls Bonds" means the Cowlitz Falls Hydroelectric Project Revenue Bonds of Lewis authorized to be issued pursuant to and under the authority of and for the purposes provided in the Bond Resolution, including but not limited to Initial Project Construction, completion of the Project and acquisition of additions, betterments, renewals, replacements, repairs, improvements and extensions of the Project, refunding Cowlitz Falls Bonds or any other lawful purpose of Lewis related to the Project.

(j) "Delay Costs" means the costs to delay or to suspend the Initial Project Construction after the issuance of the Construction Notice to Proceed, including but not limited to such costs as contractor demobilization charges; maintenance and preservation of Project assets; insurance payments; contractual payment obligations which cannot be delayed; taxes; licenses, permits and regulatory costs; environmental compliance and mitigation activities; recordkeeping, administration and general expenses; contractor penalties, change orders, and judgments allocable to the Project; all of the above costs will be accounted for according to the FERC Uniform System of Accounts.

(k) "FERC License" means the license (FERC License No. 2833) issued by the Federal Energy Regulatory Commission (FERC), or its successor, to Lewis on June 30, 1986, and any extensions, renewals, and amendments thereof, which permits Lewis to construct and operate the Project.

(l) "FERC Uniform System of Accounts" means the system of accounts prescribed by the FERC for public utilities and licensees, as may be amended, at 18 CFR 101, et seq.

(m) "Final Initial Construction Cost Estimate" means the estimate of Initial Construction Costs prepared by the Project Engineer after the receipt of construction bids for purposes of issuing Cowlitz Falls Bonds to finance Initial Project Construction.

(n) "Financing Costs" means the costs associated with the authorization, issuance and sale of Cowlitz Falls Bonds, including but not limited to reserve and contingency funds, working capital, capitalized interest, debt service reserve, bond discount and finance expenses, letter of credit fees, bond insurance, and fees for bond counsel, bond printing, financial advisor, bond registrar/paying agent and Trustee, less any net receipts related to financing.

(o) "Firm Capability" means that portion of the Project Output which may be used to serve the firm loads of Lewis, in accordance with the applicable criteria established pursuant to Bonneville's power sales contract with Lewis, or its successor contract, and regional criteria for coordinated resource operation, then in effect.

(p) "Initial Construction Costs" means the costs incurred or to be incurred to design, acquire, construct, test and place the Project in operation, including but not limited to costs of construction, design, engineering, land acquisition, licensing, permitting, environmental compliance, mitigation, administration and general expenses associated with construction, a reasonable contingency, transmission facilities from the Project site to Glenoma Substation, Lewis' Investment relating to the Project and applicable taxes, but excluding Financing Costs; and less any net receipts related to construction which are not Recovery Payments.

(q) "Initial Project Construction" means all actions to design, acquire, construct, test, and place the Project in Commercial Operation covering the time period from the issuance of the Construction Notice to Proceed to the Commercial Operation Date.

(r) "Lewis' Investment" means the amount of money equal to the costs which Lewis has incurred in the Project as of January 28, 1991, as determined pursuant to the audit by Bonneville.

(s) "Notice to Proceed" means the written notice given by Bonneville to Lewis to commence construction of the Project.

(t) "Operating Working Capital" means an amount, mutually agreed by the Parties, that provides a balance sufficient to ensure that budgeted Project Power Costs, exclusive of costs associated with Annual Debt Service can be paid by Lewis when due.

(u) "Operating Year" means any consecutive 12-month period during the Term which commences at 2400 hours, July 31, and ends at 2400 hours the following July 31.

(v) "Operation and Maintenance Costs" (O&M Costs) means those expenses for operation and maintenance of the Project and routine repairs, renewals of and replacements to the Project, including payments into working capital reserves in the Revenue Fund for items of O&M Costs the payment of which is not immediately required, and shall include, without limiting the generality of the foregoing, operation and maintenance expenses; rents; costs of spare parts, recreation and Project mitigation which are not capitalized; administrative and general expenses, and insurance costs allocable to the Project; transmission wheeling costs incurred to integrate Project output; engineering expenses; legal fees, Trustee, paying agent, registrar, letter of credit fees, and financial advisor expenses; labor costs and associated taxes and benefits; insurance premiums; any amounts

required to be rebated to the Federal Government pursuant to Section 148 of the Internal Revenue Code as may be amended; and any taxes, assessments, payments in lieu of taxes or other lawful governmental charges, all to the extent properly allocable to the Project under generally accepted accounting principles. Operation and Maintenance Costs shall not include any costs or expenses for new construction that is capitalized, interest, amortization or any allowance for depreciation.

(w) "Other Renewals and Replacements" (OR&R) means actions or items which are not included in O&M Costs that are required by the Project to repair loss or damage, make repairs, renewals and replacements, make additions, betterments, improvements and extensions, comply with regulatory requirements, and to keep the Project in good operating condition.

(x) "Other Renewals and Replacements Costs" (OR&R Costs) means costs incurred for any OR&R for the Project.

(y) "Point of Delivery" means the location at which Lewis will deliver and Bonneville will receive Project Output, and is the point which is approximately six (6) miles west of Tacoma City Light's (Tacoma) Mossyrock Dam and which is in the vicinity of the Silver Creek-Cinebar County Road where the 230 kV facilities of Tacoma and Bonneville are connected with an interconnection voltage of 230 kV.

(z) "Preliminary Initial Construction Cost Estimate" means the estimate of Initial Construction Costs based on a June, 1991 construction start date, and including but not limited to contingencies and cost escalation prepared by the Project Engineer, attached as an exhibit to this Contract on the date Bonneville executes the Contract, and adjusted to account for inflation by escalating each cost component using the Handy-Whitman Index of Public Utility Construction Costs should Project construction commence later than June, 1991.

(aa) "Project" means the separate system of Lewis as described in FERC License No. 2833, including amendments and revisions now or hereafter approved by FERC, consisting of the electric utility properties and assets, real and personal, tangible and intangible, of the Cowlitz Falls Hydroelectric Project of Lewis, as created by the Bond Resolution, including a dam, spillway, powerhouse, reservoir, transmission and electrical facilities, operations and maintenance facilities, land, and the facilities and programs for wildlife, recreation, debris and sediment control, and other mitigation, and all additions, betterments, renewals, replacements and repairs, improvements to and extensions of such Project, but shall not include the electric system of Lewis or any other properties, rights or assets, real or personal, tangible or intangible, that hereafter may be purchased, constructed or otherwise acquired by Lewis as a system that is declared by the Commission of Lewis at the time of financing thereof to be separate from the Project, the

revenues of which may be pledged to the payment of bonds issued to purchase, construct or otherwise acquire or expand such separate system or otherwise may be pledged to the payment of the bonds of another such separate system of Lewis.

(bb) "Project Engineer" means Bechtel Corporation, San Francisco, California, or another firm as mutually agreed to by the Parties, which is responsible for engineering, design, procurement, construction management, construction by force account, testing, and operation of the Project until the Commercial Operation Date.

(cc) "Project Holding Cost" means any reasonable cost incurred or obligated by Lewis from January 28, 1991, to the Construction Notice to Proceed, to ensure that the Project is ready to finance and construct, including but not limited to costs of maintaining all licenses, permits and regulatory approvals, real property, options, acquisition costs of Project equipment and cancellation charges.

(dd) "Project Operator" means the Party which has the responsibility for operating and maintaining the Project during any Operating Year.

(ee) "Project Output" means the entire amount of capacity and energy including test energy, less station service, generated and available at the Project during the Term.

(ff) "Project Power Costs" means with respect to each month an amount equal to all costs attributable to the Project, to the extent not payable from the proceeds of Cowlitz Falls Bonds or other sources (including income and investment of such proceeds), resulting from the ownership, operation, maintenance of, and repairs, renewals, replacements, additions, improvements, betterments and modifications of the Project, including, without limitation, the following items of cost:

(1) O&M Costs

(2) OR&R Costs

(3) An amount equal to the sum of the following:

(A) All amounts required under the Bond Resolution to be paid into the interest account, the serial bond principal and term bond principal accounts and the reserve account in the bond fund (as such terms are defined in the Bond Resolution) during such month;

(B) Any amount Lewis may be required during such month to deposit into any junior lien fund or account for Cowlitz Falls bonds;

(C) Any amount required under the Bond Resolution to be paid or deposited during such month into the reserve and contingency account in the Revenue Fund, or any other fund or account under the Bond Resolution;

(D) Any amount that Lewis may be required during such month to pay for the prevention or correction of any unusual loss or damage or for renewals, replacements, repairs, additions, improvements, betterments, and extensions that are necessary or prudent to keep the Project in good operating condition, to improve the operation thereof or to prevent a loss of revenues therefrom, but in each case only to the extent that funds for such payment are not available to Lewis from any funds or accounts established under the Bond Resolution for such purposes or funds for such payment are not provided by the issuance of Cowlitz Falls Bonds or other obligations of Lewis; and

(E) All other charges or obligations of the Project against the revenues of the Project of whatever nature and whether now or hereafter imposed by the Bond Resolution, by law or by contract.

(gg) "Recovery Payments" means monies received by Lewis from any other person or entity other than Lewis or Bonneville to compensate for faulty design, construction, operation, performance, or the timing of the Project occurring prior to the Commercial Operation Date, including but not limited to: the proceeds of insurance covering loss occurring prior to the Commercial Operation Date, all monies received by reason of the default of contractors in connection with the construction of the Project, and the proceeds of any Project salvage sales as a result of construction whenever occurring, but excluding any reimbursement of Financing Costs and proceeds obtained to satisfy obligations for Project termination occurring prior to Commercial Operation Date.

(hh) "Revenue Fund" means the Cowlitz Falls Hydroelectric Project Revenue Fund created by the Bond Resolution.

(ii) "Special Operation and Maintenance Costs" (Special O&M Costs) means the following O&M Costs which are subject to payment and reimbursement pursuant to Sections 13 and 14, including renewals and replacements that are not OR&R, spare parts not capitalized, labor costs (including benefits but excluding taxes), consumables, transportation expenses, and administrative and general expenses incurred to maintain and operate the Project.

(jj) "Termination Costs" means the costs incurred from January 28, 1991, to terminate Initial Project Construction prior to the Commercial Operation Date, including but not limited to the costs of terminating all contracts associated with the Project; the costs of any penalties, liquidated damages, or forfeitures;

the costs to the Project resulting from judgments, settlements, or claims properly allocable to the Project arising from termination; the expenses related to retirement, defeasance or call of outstanding Cowlitz Falls Bonds; the costs of report filings or other regulatory activities required by any regulatory body; and the costs of site restoration as directed by any regulatory body of competent jurisdiction.

(kk) "Trustee" means the Trustee for the Cowlitz Falls Bonds appointed pursuant to the Bond Resolution.

(ll) "Uncontrollable Force" means an act or event beyond the reasonable control of a Party, and which by exercise of due diligence and foresight such Party could not reasonably have been expected to avoid or remove, which impairs the ability of the Party to perform, and includes, but is not limited to, failure of or threat of failure of facilities, flood, earthquake, storm, accident, fire, lightning and other natural catastrophes, epidemic, war, labor or material shortage, strike or labor dispute, or sabotage, and also includes restraint by an order of a court of competent jurisdiction or by regulatory authorities against any action taken or not taken by a Party, after a good faith effort by the appropriate Party to obtain: (1) relief from such order; or (2) any necessary authorizations or approvals from any governmental agency or regulatory authority.

2. Term.

(a) This Contract shall be effective from 2400 hours on the date of execution and delivery by the Administrator to Lewis, and shall expire on 2400 hours June 30, 2032, provided that the Parties may mutually agree to terminate this Contract if adequate provision for the payment of Cowlitz Falls Bonds has been made in accordance with the defeasance provisions of the Bond Resolution. Unless this Contract is terminated prior to June 30, 2032 in accordance with the preceding sentence, all obligations incurred during the Term are preserved until satisfied.

(b) The obligations of the Parties pursuant to Sections 27 and 30 shall remain in effect pursuant to their terms notwithstanding the expiration of this Contract, pursuant to Section 2(a).

3. Exhibits.
Exhibit A (Power Scheduling Procedures), Exhibit B (Calculation of Residual Value), Exhibit C (Technical Standards for the Integration of Small Generating Resources), Exhibit D (Provisions Required by Statute or Executive Order), Exhibit E (Preliminary Initial Construction Cost Estimate), Exhibit F (Administrative and General Overhead Cost Methodology), and Exhibit G (Resource Cost Reimbursement Calculation) are hereby attached and by this reference made a part of this Contract.

4. Purchase and Sale of Project Output.
Lewis hereby agrees to sell and deliver, and Bonneville hereby agrees to purchase and accept delivery of, the entire Project Output during the Term, subject to the provisions of this Contract. Bonneville agrees to pay to Lewis during each Operating Year (or portions thereof) of the Term an amount equal to Project Power Costs as set out in this Contract, whether or not the Project or any part thereof has been completed, terminated, is operating or operable, or its output is suspended, interrupted, interfered with, reduced or curtailed or terminated in whole or in part, and such payments shall not be subject to reduction whether by offset or otherwise and shall not be conditioned upon the performance or nonperformance of any Party to any agreement for any cause whatever.

5. Project Holding Costs.

(a) Bonneville agrees to fund Project Holding Costs incurred or obligated by Lewis. Project Holding Costs so funded shall not be included in Lewis' Investment.

(b) Bonneville has prepared and provided to Lewis a Project Holding Cost budget covering the period from January 28, 1991, until the expected sale and issuance of Cowlitz Falls Bonds to finance Initial Project Construction. In the event the Cowlitz Falls Bonds are not issued prior to June 30, 1991, after consultation with Lewis Bonneville shall prepare and provide to Lewis an amended Project Holding Cost budget on or before June 30, 1991, for the six-month period beginning July 1, 1991. Project Holding Costs budgets for succeeding six-month periods will be prepared by Bonneville as may be necessary. The Project Holding Cost budget shall state the Project Holding Costs which are expected to be incurred, and the amount and due dates of monthly payments needed to defray such Project Holding Costs. Bonneville shall pay to Lewis the amounts on or before the due dates set forth in the Project Holding Cost budget to fund such Project Holding Costs.

(c) Should the actual Project Holding Costs incurred in any month be more or less than the amount contained in the Project Holding Cost budget, Bonneville's payment for Project Holding Costs for the next month shall be increased or decreased to compensate for such difference, as approved by Bonneville.

(d) As promptly as possible after issuance of the Construction Notice to Proceed should actual Project Holding Costs incurred in the last month differ from the Project Holding Costs paid by Bonneville, Lewis shall provide Bonneville with written notification of the difference and the reasons therefor. As approved by Bonneville payments necessary to reconcile the above difference shall be made by the appropriate Party based on such written notification.

6. Initiation of the Project.

(a) Bonneville issued the Notice to Proceed to Lewis on January 28, 1991.

(b) Since receipt of the Notice to Proceed, Lewis and Bonneville have promptly taken actions necessary to obtain financing for Project construction.

(c) Lewis has required the Project Engineer to promptly provide Lewis and Bonneville with a copy of the Final Initial Construction Cost Estimate.

(d) The Parties intend that Project construction shall be financed by the issuance and sale of Cowlitz Falls Bonds. If the Parties are unable to finance Project construction by the issuance and sale of Cowlitz Falls Bonds, the Parties shall consult and mutually agree upon the appropriate course of action.

(e) Bonneville reserves the right to provide funding for Initial Project Construction by whatever means Bonneville deems appropriate, including but not limited to funding from the Bonneville fund. If Bonneville elects to so fund Initial Project Construction from the Bonneville fund, disbursement of funds shall be governed by a separate letter agreement executed by the Parties.

(f) Upon receipt of financing for Initial Project Construction, Lewis shall be responsible for initiating, supervising and taking all actions necessary to complete Initial Project Construction.

7. Contract Principles.
The Parties shall exercise their rights and discharge their duties, as set forth in this Contract, in a manner consistent with the following principles:

(a) Proceed with all reasonable diligence to initiate and complete construction of the Project at the earliest practicable time consistent with this Contract; and

(b) At all times operate the properties of the Project and the business in connection therewith in an efficient, reliable manner and at the lowest reasonable cost consistent with the objective of achieving the efficient integration into the Federal Columbia River Power System (FCRPS) and the longest reasonable operating life for the Project; and

(c) Maintain, preserve and keep, or cause to be maintained, preserved and kept, the properties of the Project, and all additions, improvements and betterments thereto and extensions thereof, and in every part and parcel thereof in reasonably good repair, working order and condition; and

(d) From time to time make, or cause to be made, all necessary and proper repairs, renewals, replacements, additions, improvements and betterments thereto and extensions thereof, so that at all times the business carried on in connection therewith shall be properly and advantageously conducted; and

(e) Comply with the terms and conditions of any permit, license or approval for the Project issued by any Federal, State or local governmental agency or body having jurisdiction and with any Federal, State or local regulation applicable to the construction, operation, maintenance and repair of the Project, or requiring a license, permit or approval therefor, including without limitation the FERC License; and

(f) Use best efforts to reach mutual agreement on matters relating to the Project, and to act promptly on any recommendation submitted in any fashion by either Party; and

(g) In managing the investment of Project funds and accounts, exercise the judgment and care under the circumstances then prevailing which persons of prudence, discretion and intelligence exercise in the management of their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, consistent with the requirements of the Bond Resolution, State and Federal law, and Lewis' contractual obligations; and

(h) Ensure that the income earned by each fund or account, including but not limited to working capital, is credited in accordance with the terms of the Bond Resolution; and

(i) Take all actions related to the Project in a manner which is consistent with the terms and provisions of the Bond Resolution.

8. Project Oversight.

(a) Access to Project Information.

(1) As requested by Bonneville, Lewis shall promptly provide to Bonneville or its designee information and documents related to any and all matters concerning the Project, including but not limited to:

(A) Contracts, agreements, construction budgets, licenses, permits, regulatory approvals and other documents between Lewis and Project contractors related to the financing, engineering, design and construction of the Project.

(B) Contracts, agreements and other documents between Lewis and Project contractors related to the operation and maintenance of the Project, and a quarterly

summary of vouchers paid to maintain and operate the Project.

(C) Analyses and evaluations related to the Project, including but not limited to all Project cost information.

(D) Timely notice (including telephonic notice) of any meetings and negotiations related to the Project between Lewis and Project contractors or subcontractors, and Lewis staff meetings on topics which may effect Project Power Costs. Bonneville may attend and participate in all such meetings.

(2) Bonneville or its designee may upon reasonable notice and at any reasonable time, inspect Lewis' books and records and shall be provided space to conduct such inspections.

(3) Bonneville or its designee may upon reasonable notice and at any reasonable time, have access to the Project.

(b) Financing Oversight.

(1) Project Construction Financing.

(A) The Preliminary Initial Construction Cost Estimate has been prepared by the Project Engineer, and has been reviewed and approved by the Parties. The Final Initial Construction Cost Estimate shall be prepared by the Project Engineer.

(B) Except as requested by Bonneville, the proceeds of Cowlitz Falls Bonds obtained to finance the Initial Project Construction shall not exceed the Final Initial Construction Cost Estimate and the final estimate of associated Financing Costs, including Lewis' Investment.

(C) Should Cowlitz Falls Bonds, in addition to those issued for Initial Project Construction, be required to finance the completion of Project construction, or any OR&R, such additional issue(s) shall not exceed the estimated cost of such completion or OR&R, including any contingency, and the final estimate of associated Financing Costs, as estimated by the Project Engineer.

(D) If requested by Bonneville, Lewis shall include in the Cowlitz Falls Bond issuance to finance Initial Project Construction an amount equal to all or any portion of the Project Holding Costs paid or obligated to be paid by Bonneville pursuant to Section 5 and the final estimate of associated Financing Costs. Upon receipt of the proceeds of such Cowlitz Falls Bonds, Lewis

shall pay to Bonneville from such proceeds an amount equal to Project Holding Costs included in such Cowlitz Falls Bonds.

(E) At Bonneville's request, Lewis shall use its best efforts to finance through sale and issuance of Cowlitz Falls Bonds Bonneville's share of Actual Initial Construction Costs in excess of the Preliminary Initial Construction Cost Estimateand any Delay Costs and the final estimate of associated Financing Costs.

(2) Review and Approval or Disapproval.
Commencing with the date of execution of this Contract, Bonneville shall review and approve or disapprove the following items prior to Lewis taking action on them. Bonneville shall exercise its right to review and approve or disapprove within a reasonable period under the circumstances. Any item submitted to Bonneville which is not disapproved within fifteen (15) days shall be deemed to be approved by Bonneville.

(A) Terms and conditions of agreements with and selection of bond counsel, financial advisors, underwriters or other entities as may be retained during the Term to facilitate or perform Project financing;

(B) The contents of all official documents prepared for use in the issuance and sale of any Cowlitz Falls Bond issue, including but not limited to official statements, press releases, financing plans, Project definitions, and modifications or revisions thereto; and

(C) The disposition of monies from funds or accounts established by the Bond Resolution which become available due to refunding or refinancing of Cowlitz Falls Bonds.

(3) Consent for Issuance.
Lewis shall not adopt any resolution, or indenture, or incur any indebtedness which constitutes a charge on the Project through which Lewis will acquire funds during the Term to pay costs of the Project without first requesting and obtaining Bonneville's written consent. Any such request submitted to Bonneville by Lewis which is not denied by Bonneville within fifteen (15) days shall be deemed to be consented to by Bonneville.

(4) Requests for Financing, Refinancing and Refunding.

(A) When requested by Bonneville, Lewis shall in good faith use its best efforts to arrange for the refinancing or refunding of all or a portion of the

Cowlitz Falls Bonds, the financing of Delay Costs, the financing of Termination Costs for site restoration, and the financing of all or any portion of any OR&R for the Project. Such requests by Bonneville shall not require Lewis to issue and sell Cowlitz Falls Bonds with maturities which are subsequent to the Term of this Contract, unless otherwise agreed to by the Parties.

(B) Bonneville shall compensate Lewis for all costs incurred by Lewis in undertaking any refinancing, refunding or financing effort requested by Bonneville, including but not limited to staff compensation, and reasonable transportation, food, and lodging expenses.

(C) Bonneville shall withdraw any request to Lewis for financing, refinancing or refunding made pursuant to Section 8(b)(4)(A) when Lewis demonstrates that complying with such request will detrimentally affect Lewis' costs, or materially impair Lewis' ability, to finance facilities necessary to provide reliable service to Lewis' retail customers.

(c) Construction Oversight.

(1) Oversight during construction of the Project shall be conducted as follows:

(A) For Initial Project Construction, including any delay, suspension or termination thereof occurring prior to the Commercial Operation Date, Lewis shall direct the Project Engineer to prepare and submit to the Parties a monthly report containing a comparison of Initial Construction Costs expended to date to both the Preliminary Initial Construction Cost Estimate and the Final Initial Construction Cost Estimate, the percentage of the Project completed, the estimated Commercial Operation Date and the projected Actual Initial Construction Costs.

(B) During Initial Project construction, including any delay, suspension or termination thereof no later than the beginning of the sixth (6th), the twelfth (12th), eighteenth (18th), twenty-fourth (24th) and thirtieth (30th) months of the Project construction period, Lewis shall direct the Project Engineer to prepare and submit to the Parties a comprehensive Project construction cost budget patterned after the Final Initial Construction Cost Estimate, and stating among other items the then current estimated Actual Initial Construction Costs for the Project based upon then available information.

(C) For Project construction, including any delay, suspension or termination thereof occurring at any time during the Term, prior to Lewis incurring any obligations under any contract, agreement, construction budget or document relating to the engineering, design and construction of the Project, Lewis shall submit in writing the same to Bonneville and Bonneville shall have the right of review and approval or disapproval. Any item submitted to Bonneville which is not disapproved within fifteen (15) days shall be deemed to be approved.

(d) Written Recommendations.

(1) Lewis may at any time submit to Bonneville written recommendations on any matter arising under this Section 8. Bonneville shall take action on such written recommendations within fifteen (15) days of receipt by adopting, modifying or rejecting such recommendations. Bonneville shall promptly notify Lewis in writing of Bonneville's decision and its reasons therefor. Upon receipt by Lewis of such written decision by Bonneville, Lewis shall promptly implement such decision.

(2) For Initial Project Construction, including any delay, suspension or termination thereof occurring prior to one (1) year after the Commercial Operation Date, Bonneville may at any time submit to Lewis written recommendations on any matter arising out of such construction. Lewis shall have fifteen (15) days from receipt of such written recommendation to discuss the recommendation with Bonneville. Upon the expiration of the fifteen (15) day period, Lewis shall promptly implement the written recommendation of Bonneville unless Lewis can demonstrate that implementing the recommendation would be contrary to the provisions of the FERC License, State or Federal Laws, the requirements of the Bond Resolution, or any license, permit, approval or regulatory provisions applicable to the Project.

(3) For Project construction, including any delay, suspension or termination thereof occurring at any time after the Commercial Operation Date, Bonneville may at any time submit to Lewis written recommendations on any matter arising out of such construction. Lewis shall take action on such written recommendation within fifteen (15) days of receipt by adopting, modifying or rejecting such recommendation. Lewis will promptly notify Bonneville in writing of its decision and the reasons therefor.

9. Budget Process.

(a) Annual Operating Budget.

(1) An Annual Operating Budget shall be prepared commencing with the earlier of the Operating Year that includes the Commercial Operation Date or November 1994. No later than one hundred and twenty (120) days prior to the earlier of the Commercial Operation Date or November 1994, and thereafter no later than one hundred and twenty (120) days prior to the start of each Operating Year during the Term, the Parties shall commence development of a mutually agreeable Annual Operating Budget covering a prospective seven (7) Operating Year period for the following Project Power Costs:

(A) O&M Costs (including Special O&M Costs and Operating Working Capital),

(B) OR&R Costs,

(C) Annual Debt Service,

(D) Payments required to be made into the reserve account in the bond fund for the Cowlitz Falls Bonds and the reserve and contingency account in the Revenue Fund, and

(E) All other Project Power Costs.

Such Annual Operating Budget shall be completed no later than thirty (30) days prior to either the Commercial Operation Date or the beginning of the Operating Year, as appropriate.

(2) The Annual Operating Budget so developed shall contain a detailed estimate of the Project Power Costs listed in Section 9(a)(1) by month for the next two (2) Operating Years, and a general estimate by quarter of the Project Power Costs listed in Section 9(a)(1) for an additional five (5) Operating Years. The Annual Operating Budget shall establish the amount and due dates for all payments from Bonneville to Lewis for Project Power Costs during the next two (2) Operating Years, based upon the best available information. The Annual Operating Budget shall establish the amount of Operating Working Capital required by the Project and the monthly payments from Bonneville to Lewis required to provide the Annual Operating Budget during the next two (2) Operating Years.

(3) Within sixty (60) days of the end of each Operating Year during the Term, Lewis shall provide Bonneville with a written comparison of the actual balance of Operating Working Capital with the amount budgeted for Operating

Working Capital for that Operating Year. If this comparison establishes a difference between actual balance and budgeted Operating Working Capital for that Operating Year, Bonneville's payments to Lewis for Operating Working Capital under the Annual Operating Budget then in effect shall be adjusted as follows:

(A) If the actual balance exceeded amounts budgeted in the Annual Operating Budget for Operating Working Capital, for the Operating Year most recently ended, Bonneville's next monthly payment shall be reduced by such difference.

(B) If the actual balance was less than the amounts budgeted in the Annual Operating Budget for Operating Working Capital, for the Operating Year most recently ended, Bonneville's next monthly payment(s) shall be increased by such difference.

(4) During any Operating Year either Party may request that the Annual Operating Budget for that Operating Year be amended when it believes that: (A) the Annual Operating Budget (excluding Annual Debt Service) will exceed actual Project Power Costs (excluding Annual Debt Service) by fifteen (15) percent or more; or (B) actual Project expenses have or will exceed the Operating Working Capital contained in the Annual Operating Budget. Upon mutual agreement of the Parties, the Annual Operating Budget shall be amended to reflect such actual or projected costs for that Operating Year.

(5) Bonneville shall pay to the Trustee or paying agent the portion of Project Power Costs, required to be paid pursuant to Section 4, consisting of Annual Debt Service, on or before the date such amounts are due under the Bond Resolution.

(6) Within one (1) year of the execution of this Contract, the Parties shall mutually agree upon a format and supporting documentation to be used for establishing the Annual Operating Budget, which format may be revised as agreed by the Parties.

(7) A methodology for defining and allocating administrative and general costs to the Project, is attached as Exhibit F and that methodology may be revised as agreed by the Parties.

(8) When other entities make demands or proposals which will increase Project Power Costs, the Parties shall consult and jointly decide whether the proposed increase should be contested. If the Parties jointly decide to contest a proposed increase, both Parties shall support and cooperate in the contest, and the costs of such contest shall be Project Power Costs.

(b) OR&R Cost Oversight.

(1) As part of the Annual Operating Budget process the Parties shall consult and mutually agree upon the need for, timing of and means of funding any OR&R.

(2) To the extent the Parties decide to issue Cowlitz Falls Bonds to finance all or a portion of any OR&R, the term of such Cowlitz Falls Bonds shall equal, as nearly as practicable, the expected life (or the weighted average of the expected lives) of the OR&R.

10. Delay, Suspension or Termination of Project Construction.

(a) Delay of Construction.

(1) (A) Bonneville in its sole discretion after consultation with Lewis shall have the right to delay Initial Project Construction for the duration of any injunction applicable to the Project. The Parties shall take all reasonable actions necessary to lift the injunction.

(B) In addition to any delay instituted pursuant to Section 10(a)(1)(A), Bonneville in its sole discretion after consultation with Lewis shall have the right to delay Initial Project Construction for up to twelve (12) months in the aggregate for any reason, but in no event shall such delay extend beyond the construction start or completion date as established by FERC, or expiration date for any permit or license required for Initial Project Construction. Upon request by Bonneville, the Parties shall take actions necessary to extend any permits or licenses required for Initial Project Construction for a period at least equal to the delay period requested by Bonneville.

(2) Bonneville shall provide Lewis with written notification within thirty (30) days of its decision to delay Initial Project Construction pursuant to Section 10(a)(1) and such written notification shall establish the effective date of delay and period of delay. Lewis shall take all actions necessary to delay Initial Project Construction for the period specified by Bonneville, at the earliest date, but in no case later than thirty (30) days after receipt of the written notification by Bonneville.

(3) (A) For delays pursuant to Section 10(a)(1)(A) as promptly as possible after receipt of written notification Lewis shall prepare and provide to Bonneville Delay Cost budgets for consecutive twelve-month periods for the duration of the injunction. For delays pursuant to Section 10(a)(1)(B) as promptly as possible after

receipt of written notification Lewis shall prepare and provide to Bonneville a twelve-month Delay Cost budget. Each Delay Cost budget, shall state the Delay Costs which are expected to be incurred, and the amount and due dates of monthly payments needed to defray such Delay Costs. Bonneville shall pay to Lewis the amounts on the due dates set forth in the Delay Cost budgets to fund such Delay Costs.

(B) Should the actual Delay Costs incurred in any month be more or less than the amount contained in the Delay Cost budget, Bonneville's payment for such costs for the next month shall be increased or decreased to compensate for such difference, as approved by Bonneville.

(C) As promptly as possible after the end of the delay period should actual Delay Costs incurred in the last month differ from the Delay Costs paid by Bonneville, Lewis shall provide Bonneville with written notification of the difference and reasons therefor. As approved by Bonneville, payments necessary to reconcile the above difference shall be made by the appropriate Party based on such written notification.

(b) Termination of Construction.

(1) Bonneville in its sole discretion after consultation with Lewis shall have the right to terminate Initial Project Construction as follows:

(A) Prior to the issuance of Construction Notice to Proceed, if Bonneville determines that the Final Initial Construction Cost Estimate, pursuant to Section 6(c), exceeds 107 percent of the Preliminary Initial Construction Cost Estimate by $12 million, or more.

(B) After the issuance of Construction Notice to Proceed, if Bonneville determines that the projected Actual Initial Construction Costs, pursuant to Section 8(c)(1)(A) and (B), are forecast to exceed 107 percent of the Preliminary Initial Construction Cost Estimate by $12 million or more.

(C) If there is any action by any legal, administrative or regulatory body of competent jurisdiction, which prohibits or renders impracticable completion of Initial Project Construction.

(D) If there is any act or event which constitutes an Uncontrollable Force which prohibits or renders impracticable completion of Initial Project Construction.

(E) If Bonneville is required to adopt a policy which is applicable to the Project and which prohibits or renders impracticable completion of Initial Project Construction.

(F) If for any reason unrelated to the Project Bonneville determines that completion of Initial Project Construction is impracticable.

(2) Bonneville shall provide Lewis with written notification within thirty (30) days of receipt of the most recent report submitted pursuant to Section 6(c) or 8(c)(1)(A) and (B) and such written notification shall establish the effective date of Bonneville's decision to terminate Initial Project Construction pursuant to Section 10(b)(1)(A) or (B). Lewis shall take all actions necessary to terminate Initial Project Construction, at the earliest date but in no case later than thirty (30) days after receipt of the written notification by Bonneville.

(3) Bonneville shall provide Lewis with written notification within thirty (30) days of the action, event, policy or determination and such written notification shall establish the effective date of Bonneville's decision to terminate Initial Project Construction pursuant to Section 10(b)(1)(C), (D), (E) or (F). Lewis shall take all actions necessary to terminate the Project, at the earliest date but in no case later than thirty (30) days after receipt of the written notification by Bonneville.

(4) Any decision by Bonneville not to provide written notification to Lewis of any election pursuant to Sections 10(b)(2) and (3) within the time periods set forth therein shall constitute an election not to terminate Initial Project Construction based on information then in Bonneville's possession.

(5) If Bonneville decides to terminate Initial Project Construction pursuant to Section 10(b)(1)(A) through (E), the Termination Costs shall be paid by the Parties as follows:

(A) For termination of Initial Project Construction occurring prior to the sale and issuance of Cowlitz Falls Bonds, Termination Costs shall be paid by Bonneville.

(B) For termination of Initial Project Construction after the sale and issuance of Cowlitz Falls Bonds and prior to the forty-sixth (46th) day after the issuance of the Construction Notice to Proceed, Lewis shall pay half of the Termination Costs subject to a total limit on such payments equal to the amount held in the separate account established pursuant to

Section 11(b), and from the $2 million pledged by Lewis, pursuant to Section 11(a). Bonneville shall pay the remainder of the Termination Costs.

(C) For termination of Initial Project Construction after the period established in Section 10(b)(5)(B) all funds held in the separate account established pursuant to Section 11(b), and from the $2 million pledged by Lewis, pursuant to Section 11(a) shall be disbursed to Lewis for the payment of all Termination Costs. Bonneville shall pay the remainder of the Termination Costs.

(6) For termination of Initial Project Construction pursuant to Section 10(b)(1)(F), Termination Costs shall be paid by Bonneville and no Termination Costs shall be paid from the separate account established pursuant to Section 11(b).

(7) Should Bonneville elect to terminate Initial Project Construction pursuant to Section 10(b)(1), Termination Costs shall be budgeted and paid as follows:

(A) As promptly as possible after receipt of the written notification Lewis shall provide to Bonneville for approval a written statement of the Termination Costs which Lewis expects to incur.

(B) For termination pursuant to Sections 10(b)(1)(A) through (E), upon approval by Bonneville, Bonneville and Lewis shall authorize the Trustee to pay to Lewis from the separate account established pursuant to Section 11(b), an amount equal to the sum of the Termination Costs set forth in the written statement subject to limitations identified in Section 10(b)(5)(B) if applicable. In the event such funds are insufficient to pay all Termination Costs, the funds held in the Construction Fund for Project construction shall be made available to Lewis to pay Termination Costs. In the event such funds from these sources are insufficient to pay all Termination Costs, Bonneville shall pay to Lewis an amount equal to Termination Costs remaining unpaid.

(C) For termination pursuant to Section 10(b)(1)(F), upon approval by Bonneville, Bonneville shall authorize the disbursment to Lewis of an amount equal to the sum of the Termination Costs set forth in the written statement prepared pursuant to Section 10(b)(7)(A). Funds for such payments shall be from any source other than the separate account established pursuant to Section 11(b), as determined by Bonneville.

(D) As promptly as possible should the actual Termination Costs incurred by Lewis differ from those paid by Bonneville pursuant to Section 10(b)(7), Lewis shall promptly provide Bonneville written notification of

the amount of and reasons for such differences. The difference between the actual Termination Costs incurred by Lewis and the payment made by Bonneville shall be paid to the appropriate Party. The payment due under this Section (10(b)(7)(D) shall include interest on the sum owing from the date the Termination Costs are incurred, pursuant to Section 10(b)(7) until the date the invoice is paid, calculated using the weighted average of the interest rate on ninety (90) day Treasury Bills during the time period for which the interest charge is due.

11. Lewis' Investment in the Project.

(a) Upon the receipt of the proceeds from the sale and issuance of Cowlitz Falls Bonds, Lewis shall retain $3 million of such proceeds as partial repayment of Lewis' Investment. Lewis shall be obligated to use up to $2 million of the $3 million to pay reimbursement obligations pursuant to Section 14(a) or Termination Costs pursuant to Section 10(b)(5)(B) and (C) to the extent such obligations exceed the funds in the separate account established pursuant to Section 11(b).

(b) On the day of receipt from the proceeds of the sale and issuance of Cowlitz Falls Bonds the entire amount of Lewis' Investment, minus $3 million disbursed pursuant to Section 11(a) shall be placed on deposit in a separate account in the Construction Fund, as provided in the Bond Resolution.

(c) The Trustee shall only disburse monies from the separate account upon receipt of invoices prepared in accordance with Section 16.

(d) After payment of reimbursement obligations pursuant to Section 14(a) and Termination Costs pursuant to Section 10 the Trustee shall dispose of the funds remaining in the separate account as follows:

(1) The amount originally deposited in the separate account established pursuant to Section 11(b), less disbursements to pay reimbursement obligations pursuant to Section 14(a) and Termination Costs pursuant to Section 10 shall be disbursed to Lewis upon receipt of an invoice prepared in accordance with Section 16.

(2) Interest earnings on the fund held in the separate account established pursuant to Section 11(b) shall be paid as follows:

(A) To Lewis the amount determined by multiplying such interest earnings by a fraction the numerator of which shall be the amount originally deposited in such separate account pursuant to Section 11(b) less one half of the total disbursements from such separate account and the denominator of which shall be the

amount originally deposited in such separate account pursuant to Section 11(b).

(B) To the bond fund for the Cowlitz Falls Bonds, or such other fund established by the Bond Resolution as Bonneville may direct, the interest earnings remaining after the payment to Lewis under Section 11(d)(2)(A).

(e) If Bonneville terminates Initial Project Construction pursuant to Section 10(b)(1)(F) the Trustee shall disburse to Lewis all of the funds held in the separate account upon receipt of an invoice prepared in accordance with Section 16.

12. Project Performance.
The Parties shall ensure Project performance as follows:

(a) As directed by Bonneville, prior to the start of the Annual Operating Budget process pursuant to Section 9(a), Lewis, Bonneville or a Project contractor shall perform a relative efficiency test(s) on the Project, using either a manual test or an automatic data recording test device. The test(s) will establish the relative efficiency of each of the Project's units, and provide information to optimize the operation of each unit.

(b) Based on the information provided by each annual test, Lewis shall take the steps necessary to optimize the operation of each of the Project's units.

(c) Based upon the results of the test(s), the Parties shall determine if either of the Project's units has suffered an efficiency loss compared with the test conducted in the preceding Operating Year, and shall determine the cause or causes of such loss.

(d) After consultation with Lewis, Bonneville shall determine what corrective measures are needed to remedy the loss of efficiency, and shall include funding for such corrective measures in the Annual Operating Budget. Lewis shall promptly implement such corrective measures.

(e) Based on the information provided by each annual test, Lewis shall take the steps necessary to optimize the two unit operation of the Project.

13. Incentive Performance Payments.
Starting on the Commercial Operation Date, Bonneville shall make incentive performance payments in the amounts and to Lewis determined as follows:

(a) Actual Initial Construction Costs.
The Parties shall consult and mutually agree upon the Actual Initial Construction Costs within twenty-four (24) months after the Commercial Operation Date. Should Actual Initial Construction Costs be less than 95 percent of the Preliminary Initial Construction Cost Estimate, Bonneville shall pay Lewis an amount equal to one-half of the amount by which Actual Initial Construction Costs are less than 95 percent of the Preliminary Initial Construction Cost Estimate, less the underwriters discount and direct financing expenses associated with the amount to be paid to Lewis. The payment due under this Section shall include an interest charge on the payment for the period from the Commercial Operation Date to the date the invoice is paid, calculated using the weighted average of the interest rate on ninety (90) day Treasury Bills during the period for which the interest charge is due. For purposes of making the determination pursuant to this Section 13(a), Bonneville shall exclude from the Actual Initial Construction Costs all costs which are attributable to implementation of recommendations made pursuant to Section 8(d)(2), unless warranted as required by the Project Engineer.

(b) Special Operation and Maintenance Costs.
Within sixty (60) days after the end of each Operating Year, the Parties shall consult and mutually agree on whether payments are due for Special O&M Costs, subject to the limitations contained in Section 15, as set forth below:

(1) Actual Special O&M Costs incurred for the Project shall be compared with the unamended amount contained in the Annual Operating Budget for Special O&M Costs prior to the start of that Operating Year.

(2) Should actual Special O&M Costs for an Operating Year be less than 97.5 percent of the unamended amount contained in the Annual Operating Budget for Special O&M Costs prior to the start of that Operating Year, Bonneville shall pay to Lewis an amount equal to one-half of the amount by which actual Special O&M Costs are less than 97.5 percent of the unamended amount contained in the Annual Operating Budget for Special O&M Costs prior to the start of that Operating Year.

(3) The calculation set out in Section 13(b)(1) and (2) shall exclude actual Special O&M Costs which are attributable to an Uncontrollable Force.

14. Reimbursement Obligation.
During the Term, Lewis shall make reimbursement payments in the amounts as determined below:

(a) Actual Initial Construction Costs.

(1) Should Actual Initial Construction Costs exceed 107 percent of the Preliminary Initial Construction Cost Estimate, Lewis will reimburse Bonneville from the amount held in the separate account established pursuant to Section 11(b), and from the $2 million pledged by Lewis pursuant to Section 11(a), an amount equal to the amount by which Actual Initial Construction Costs exceed 107 percent of the Preliminary Initial Construction Cost Estimate, subject to a total limit on reimbursement payments by Lewis to Bonneville equal to the $2 million pledged by Lewis pursuant to Section 11(a) and the amount held in the separate account established pursuant to Section 11(b).

(2) For purposes of this Section Bonneville shall exclude from the Actual Initial Construction Costs all costs which are attributable to the implementation of recommendations made pursuant to Section 8(d)(2), unless warranted as required by the Project Engineer.

(3) For purposes of Sections 13(a) and 14(a)(1), Bonneville shall include in the Actual Initial Construction Costs all Delay Costs which are attributable to delays or suspensions, pursuant to Section 10(a)(1), which are caused by:

(A) Any action by any legal, administrative or regulatory body of competent jurisdiction, which prohibits or renders impracticable continuation of Initial Project Construction;

(B) Any act or event which constitutes an Uncontrollable Force which prohibits or renders impracticable continuation of Initial Project Construction;

(C) If Bonneville is required to adopt a policy which is applicable to the Project and which prohibits or renders impracticable continuation of Initial Project Construction.

(4) For purposes of Sections 13(a) and 14(a)(1), Bonneville shall exclude from the Actual Initial Construction Costs all Delay Costs which are attributable to delays or suspensions, pursuant to Section 10(a)(1)(B), which are caused by any reason, unrelated to the Project, for which Bonneville determines that continuation of Initial Project Construction is impracticable.

(b) Special Operation and Maintenance Costs.
Within sixty (60) days after the end of each Operating Year, the Parties shall consult and mutually agree on whether payments are due for Special O&M Costs, subject to the limitations contained in Section 15, as set forth below:

(1) Actual Special O&M Costs incurred for the Project shall be compared with the unamended amount contained in the Annual Operating Budget for Special O&M Costs for that Operating Year.

(2) Should actual Special O&M Costs for an Operating Year exceed 102.5 percent of the unamended amount contained in the Annual Operating Budget for Special O&M Costs for that Operating Year, Lewis shall pay to Bonneville an amount equal to one-half of the amount by which actual Special O&M Costs exceed 102.5 percent of the unamended amount contained in the Annual Operating Budget for Special O&M Costs for that Operating Year.

(3) The calculation set out in Section 14(b)(1) and (2) shall exclude actual Special O&M Costs which are attributable to Uncontrollable Forces.

15. Limitations on Certain Incentive and Reimbursement Payments. The obligations to make certain payments, pursuant to Sections 13 and 14 are limited as follows:

(a) Annual Obligation Limitation. Lewis' obligation to reimburse Bonneville for certain Special O&M Costs, as set forth in Section 14(b), and Bonneville's obligation to make incentive payments for Special O&M Costs pursuant to Section 13(b), shall be limited during any Operating Year to an amount calculated by multiplying 3.6 mills per kilowatthour (9.5 percent of Lewis' 1988 retail rates) by Lewis' total retail sales (in kilowatthours) during the Operating Year in which the payment obligation was incurred subject to the cumulative payment limit set forth in Section 15(b).

(b) Cumulative Payment Obligation Limitation. Commencing with the Commercial Operation Date, the cumulative payment obligation paid by Lewis during the Term to reimburse Bonneville for Special O&M Costs pursuant to Section 14(b), shall be limited to the amount remaining in the separate account after the disbursements pursuant to Sections 11(d)(2) and 14(a), inflated by the Gross National Product Implicit Price Deflator, as published in the Survey of Current Business by the United States Department of Commerce.

16. Billing and Payment.

(a) General Provisions. The payment of amounts due from one Party to the other Party under this Contract shall be billed and paid as follows:

(1) Except as provided in Section 9(a)(5) for the payment of Annual Debt Service, payment of all Project Power Costs from Bonneville to Lewis shall be due in the amounts and on

the due dates specified in the Annual Operating Budget established pursuant to Section 9(a).

(2) Payments pursuant to Sections 13(a) and (b), 14(a) and (b), and Section 25 shall be made by invoice submitted from the Party entitled to payment to the Party owing payment.

(3) Payments shall be made as such costs are incurred pursuant to Sections 10(b)(7), 11(d) and (e), and 14(a) and shall be made by invoice prepared by Bonneville, acknowledged by Lewis, and submitted to the Trustee.

(4) Any invoice for payment submitted to a Party must state the Contract section under which payment is sought, the amount due, and the date the invoice was issued.

(5) Payment of amounts due under this Contract shall be due by the close of business on either: (A) the due date specified in the Annual Operating Budget; or (B) in the absence of a due date in the Annual Operating Budget, the 35th day after the issuance date shown on the invoice.

(6) Payments received by mail shall be accepted without assessment of the charges set out in Section 16(a)(7) provided that the postmark indicates payment was mailed either: (A) five (5) days prior to the payment due date established in the Annual Operating Budget; or (B) on or before the 30th day after issuance of the invoice. If the due date in the Annual Operating Budget, or the 35th day after the date of issuance of an invoice is a Saturday, Sunday or other non-business day of the paying Party, the next following business day shall be the last day on which payment may be made to avoid additional charges pursuant to Section 16(a)(7).

(7) Payments not received when due shall bear an additional charge, commencing ten (10) days after the payment due date, of one-twentieth percent (0.05%) of the amount remaining unpaid, which additional charge shall be added on each succeeding day until the entire amount, including the additional charge, is paid in full.

(8) Failure to receive an invoice shall not release a Party from liability for payment.

(9) Payments due for amounts payable under this Contract shall be made either by check or by electronic funds transfer to a financial institution designated by each of the Parties.

(b) Billing Disputes.
In the event that a Party disputes an invoice, the Party disputing the invoice shall pay the invoice under protest. The Parties shall in good faith attempt to resolve such dispute by consultation. Any subsequent adjustment to such invoice

resulting from consultation by the Parties or arbitration shall include interest from the date payment was made, calculated using the weighted average of the interest rate on ninety (90) day Treasury Bills during the time period for which the interest charge is due. The Parties may challenge invoices and seek adjustments anytime within three (3) years after the date the invoice is issued, and shall thereafter be foreclosed from seeking adjustment.

17. Disposition of Funds Upon Contract Expiration.
Upon the expiration of this Contract:

(a) Bonneville shall thereafter have no obligation to pay Project Power Costs.

(b) Lewis shall not thereafter be required to refund to Bonneville any amounts on deposit in the bond fund, the Construction Fund, or any arbitrage rebate fund established pursuant to the Bond Resolution.

(c) Lewis shall pay Bonneville a sum equal to the amount then on deposit which was paid by Bonneville into the Revenue Fund and all accounts therein, including the general account, which amount shall not include bond proceeds deposited in such fund and accounts.

(d) Lewis shall pay Bonneville an amount equal to the fair market value of any inventory of generally consumable spares for the Project which are not in service, including but not limited to oil, wire, meters, tools, safety equipment and office supplies.

(e) For equipment acquired for the Project which is not financed by Cowlitz Falls Bonds, including, but not limited to, vehicles and boats, and with an expected useful life, as mutually agreed by the Parties, extending beyond the Term, Lewis will pay Bonneville an amount equal to remaining costs of such equipment, calculated pursuant to Exhibit B.

(f) For any OR&R not financed by Cowlitz Falls Bonds, and with an expected useful life, as mutually agreed by the Parties, extending beyond the Term, Lewis will pay Bonneville an amount equal to the residual value of such OR&R, calculated pursuant to Exhibit B.

(g) For any prepayments of insurance premiums, taxes or any other Project expense, for a period which extends beyond the Term, Lewis will pay Bonneville an amount equal to remaining residual value of such prepayment, calculated pursuant to Exhibit B.

18. Project Operator.

(a) Lewis shall be responsible for constructing, operating and maintaining the Project during the Term. While Project Operator, Lewis may elect at any time to have Project operations performed by a Project contractor.

(b) During the Term, Bonneville may replace Lewis as Project Operator if:

(1) The actual Special O&M exceeded budgeted Special O&M by an amount equal to or greater than the amount calculated pursuant to Section 15(a) for any three (3) years in any consecutive five (5) year period; or

(2) The amount by which actual Special O&M exceeded budgeted Special O&M by $6 million or more, as inflated by the Gross National Product Implicit Price Deflator, as published in the Survey of Current Business by the United States Department of Commerce; or

(3) Either of the Project's units relative efficiency, measured pursuant to Section 12, declines by two (2) percent or more per year in any three (3) years during any consecutive five (5) year period; or

(4) The Project's Annual Availability Factor falls below 80 percent for any three (3) years in any consecutive five (5) year period.

(c) If Bonneville removes Lewis as Project Operator, the Parties shall have no further obligation to make payments pursuant to Sections 13(b) and 14(b).

(d) Should either Lewis or Bonneville elect to have Project operations performed by a Project contractor, pursuant to Sections 18(a) or (b), then the Party which has not made such election shall have the right to participate in the selection of the Project contractor, and to review and comment upon the proposed contract for Project operations prior to execution.

(e) Notwithstanding any other provision of this Contract, Lewis shall have the right at any time during the Term to perform any and all acts required by an order or orders of FERC, or its successor, or any State or local agency or body of competent jurisdiction.

19. Power Deliveries.
Lewis shall make the Project Output available to Bonneville at the Point of Delivery as specified in this Section.

(a) Project Dispatch.
Bonneville shall have the right to schedule the Project Output to best serve FCRPS requirements, subject to FERC License requirements and operating constraints. Lewis shall promptly provide to Bonneville all information and documentation necessary to determine FERC License requirements and operating constraints. Schedules of deliveries of Project Output to Bonneville shall be submitted according to the Power Scheduling Procedures Exhibit A.

(b) Metering.

(1) The amounts of capacity, energy and reactive energy delivered from the Project to Bonneville at the Point of Delivery during each month shall be computed using measurements made by meters installed at the Project at the generator bus bar over which the electric power flows, and adjusted for losses between the metering point and the Point of Delivery using the line loss calculation mutually agreed to by the Parties. The capacity, energy and reactive energy from the Project shall be metered at the generation voltage of the Project. Lewis shall test the metering equipment at least once every two (2) years. The costs of tests and inspections of the metering equipment shall be Project Power Costs. Either Party shall give the other reasonable notice of the time when any tests and inspections are to be made in order that both Parties may be properly represented at each test and inspection.

(2) If Bonneville determines that automatic data acquisition (telemetering), microwave or other communication equipment is needed for scheduling, automatic generation control, two-way metering, or for other purposes, such equipment shall be installed upon request, and the costs of such equipment and its installation shall be Project Power Costs. Such equipment shall be the property of Bonneville, and at the expiration or termination of this Contract at Bonneville's request and expense, such equipment may be removed from the Project.

(c) Character of Service.
Project Output made available to Bonneville shall be in the form of three phase current, alternating at a nominal frequency of sixty (60) hertz and at 230 kV. Phase imbalance shall be no greater than ten (10) percent.

(d) Delivery Over Other Facilities.
The delivery of Project Output to Bonneville at the Point of Delivery shall be made by transfer over facilities of Tacoma City Light (Tacoma) and Lewis. The terms and conditions for use of the Tacoma facilities shall be governed by a transfer agreement between Lewis and Tacoma, which shall be based on the principles as agreed to by the Parties. The terms and conditions for the use of Lewis' facilities shall be governed by

a transfer agreement between Bonneville and Lewis. Lewis shall use its best efforts to effect quality and continuity of deliveries to Bonneville comparable to that which would be provided under direct deliveries.

(e) Continuity of Service.
Lewis or Bonneville may temporarily interrupt or reduce deliveries of capacity or energy from the Project if Lewis or Bonneville determines that such interruption or reduction is necessary or desirable in case of system emergencies, or in order to install equipment in, make repairs to, make replacements within, make investigations and inspections of, or perform other maintenance work on, Lewis' facilities or Bonneville's facilities. Except in the case of emergency, Lewis and Bonneville shall give notice to the other Party of any scheduled interruption or reduction, the reason for and the probable duration of any such interruption or reduction, to the extent possible.

20. Station Service.
Power required by the Project for station service shall be provided by the Project when available. When power is not available from the Project for station service, power for station service shall be provided to Lewis by Bonneville under applicable Bonneville rate schedules. The cost of power for station service provided by Bonneville shall be a Project Power Cost.

21. Interconnection.

(a) Lewis shall engineer and design the Project giving due consideration to operational safety, integrity, and reliability of the FCRPS and the facilities with which it is interconnected.

(b) Lewis and Bonneville shall mutually agree on the type and the extent of interconnection equipment necessary for integration of the Project Output following the guidelines established by the Technical Standards for Integration of Small Generating Resources to the Bonneville Transmission System, attached as Exhibit C.

22. Contractor Performance.

(a) In all contracts and agreements between Lewis and all Project contractors and subcontractors related to the engineering, design and construction of the Project, Lewis shall include provisions to ensure that contractors and the subcontractors perform in accordance with contract specifications. All such contracts and agreements shall state that Bonneville shall have audit rights pursuant to Section 23. To the extent that such contracts and agreements impose financial penalties or require payments due to failure to perform, such penalties and payments

shall be assigned by mutual agreement of the Parties to Bonneville or the Project as appropriate.

(b) The Parties agree to make a good faith effort to include in the contract with the Project Engineer, and with other contractors as appropriate, provisions that will establish incentives for constructing the Project on schedule and under budget, as mutually agreed to by the Parties.

23. Audits.

(a) With regard to this Contract and payments made under it, each Party shall reserve the right to audit and to examine any cost, payment, Lewis' Investment, settlement or supporting documentation, including, but not limited to, audit reports resulting from any items set forth in this Contract. Any audit(s) shall be undertaken by either Party's representative(s) upon reasonable notice to the other Party and at reasonable times and in conformance with generally accepted auditing standards. The Party being audited agrees to cooperate fully with any such audit(s). The right to audit a cost shall extend for a period of three (3) years following the last day of the Operating Year in which such cost was incurred under this Contract. The Parties agree to retain all records and documentation related to this Contract prepared in the normal course of business for the entire length of this audit period. The Parties agree that all Project accounting and records shall be maintained in accordance with generally accepted accounting principles.

(b) The Party being audited shall be notified in writing of any exception taken as a result of an audit promptly after completion of the audit. The Party being audited shall have thirty (30) days to review the notice of exception.

(c) If the Parties agree upon any exception(s) found as a result of the audit, the owing Party shall directly refund the amount of such exception(s) to the other Party, with interest calculated using the weighted average of the interest rate on ninety (90) day Treasury Bills during the period for which the interest is being charged.

24. Uncontrollable Force.

(a) Obligations of the Parties.
Except as provided in this Section 24(a), any obligation of a Party to perform under this Contract shall be excused when failure to perform such obligations is due to an Uncontrollable Force. In the event that either Party is unable to perform due to an Uncontrollable Force, such Party shall exercise due diligence to remove such inability with reasonable dispatch. Nothing in this Section shall be construed to require either

Party to settle any strike or labor dispute in which it may be involved. Nothing in this Section shall be construed to relieve either Party of its obligation to pay or reimburse the other Party, pursuant to Sections 4, 5, 10, 11, 13, 14, 17, 25 and 27(c) and (d).

(b) Notice.
Each Party shall notify the other as soon as practicable of any Uncontrollable Force which may impair performance under this Contract. Failure to give such notice within a reasonable period shall be deemed a waiver of such Uncontrollable Force.

25. Average System Cost Treatment.

(a) During the Term, it is the intention of the Parties to treat the Project as a separate system of Lewis. Further, the Parties intend that the costs incurred and payments made by the Parties, and the Project Output delivered by Lewis to Bonneville, pursuant to this Contract shall neither increase nor decrease the payments to which Lewis is entitled under the Average System Cost Methodology of the Residential Exchange Agreement.

(b) The Parties agree that any costs or payments made under this Contract which have been included in any retail revenue requirement used to establish Lewis' retail electric rates will be separately identified by Lewis and included in Lewis Average System Cost Filing. If Bonneville's Final Average System Cost Report on any Average System Cost Filing does not functionalize such costs and payments to Distribution/Other, or does not exclude Project Output from Lewis' Contract System Loads, then for the period such Final Average System Cost Report is in effect, Bonneville shall pay Lewis an amount equal to the difference between the payment received by Lewis pursuant to the Residential Exchange Agreement and the payment Lewis would receive if such costs and payments had been functionalized to Distribution/Other, or if Project Output had been excluded from Contract System Loads. Such payments, if any, accruing during any Operating Year shall be made within sixty (60) days after the end of that Operating Year.

(c) Should the Average System Cost Methodology be amended, revised, replaced or Bonneville issues a formal interpretation applicable to all Exchanging utilities, the Parties shall consult and determine if Section 25(b) still implements the intent of the Parties as set forth in Section 25(a). When the Parties determine that Section 25(b) does not implement Section 25(a), the Parties shall promptly amend Section 25(b) as necessary to implement the intent of the Parties set forth in Section 25(a).

26. Federal Base System Resource.
Bonneville agrees that during the Term of this Contract, the Project shall not be treated as a Federal base system replacement resource

when Bonneville computes Lewis' entitlement to and allocation of Firm Energy and Firm Capacity, during any period of insufficiency, pursuant to Section 7 and Exhibit D of Lewis' power sales contract (Contract No. DE-MS79-81BP90503) or under provisions of any successor power sales contract with Bonneville which implements Section 5(b)(6) of the Pacific Northwest Electric Power Planning and Conservation Act, Public Law 96-501.

27. Use of Project Output.

(a) From the expiration date of this Contract (2400 hours, June 30, 2032) until the later of (1) the end of the second FERC License issued to Lewis to operate the Project; or (2) July 1, 2066, if and to the extent Lewis is licensed to operate the Project, Lewis agrees to dedicate the Firm Capability of the Project to serve the loads of Lewis under its power sales contract with Bonneville or its successor, in effect during such period. Lewis shall have no obligation under this Section 27 if Project construction is terminated pursuant to Section 10.

(b) Subject to Bonneville's election pursuant to Section 27(c), Lewis shall be relieved of the obligation imposed pursuant to Section 27(a) during any Operating Year when the cost of the Firm Capability from the Project, calculated by dividing all costs properly chargeable to the Project pursuant to the FERC Uniform System of Accounts, or its successor, by the Project's Firm Capability exceeds Lewis' cost of wholesale power purchased from Bonneville. A sample calculation is attached as Exhibit G.

(c) During the Operating Year when Lewis is relieved of the obligation imposed pursuant to Section 27(a) by operation of Section 27(b), Bonneville may elect to require Lewis to continue to dedicate the Firm Capability to serve the loads of Lewis. Bonneville shall make such election by providing Lewis written notification, not later than sixty (60) days after a determination that Lewis is relieved of its obligation under Section 27(a) pursuant to Section 27(b), that it will reimburse Lewis for all costs properly chargeable to the Project pursuant to the FERC Uniform System of Accounts, or its successor, less credits for the sale of nonfirm energy, in excess of Lewis' cost of wholesale power from Bonneville.

(d) During the Operating Year when Bonneville elects to reimburse Lewis pursuant to Section 27(c), reimbursement payments from Bonneville to Lewis shall be made quarterly, unless otherwise agreed to by the Parties. Reimbursement under Section 27(c) shall be governed by a separate agreement to be negotiated by the Parties at the time Bonneville makes its election pursuant to Section 27(c). If the Parties are unable in good faith to mutually agree on the terms of such agreement within one hundred and eighty (180) days of receipt of Bonneville's election by Lewis, the election shall be deemed to be rescinded.

28. Assignment.

(a) Each Party agrees that it shall not sell, assign or transfer its interests, rights, or obligations under this Contract except as follows:

(1) To any corporation or other entity required or permitted under the Bond Resolution, including but not limited to the Trustee.

(2) So long as no Cowlitz Falls Bonds are outstanding under the Bond Resolution, any corporation or other entity with the written consent of the other Party, which consent shall not be unreasonably withheld.

(3) Bonneville may sell, assign, transfer or otherwise dispose of Project Output in any manner in its sole discretion.

(b) In the event of any such assignment or transfer, the Party making the assignment shall provide the other Party with notice of the assignment or transfer, together with a true copy of the instrument of assignment or transfer not less than ten (10) days prior to the intended date of execution.

(c) This Contract shall inure to the benefit of and shall be binding upon the respective successors and assigns of the Parties.

29. Notices.
Any notice, demand, approval, proposal, protest, consent, direction, or request provided for in this Contract shall be effective from the date mailed or transmitted by facsimile or similar means, and shall be directed as follows:

IF TO LEWIS:
Public Utility District
No. 1 of Lewis County,
Washington
Manager
P.O. Box 330
Chehalis, WA 98532

IF TO BONNEVILLE:
Bonneville Power Administration
Assistant Administrator
for Energy Resources - R
P.O. Box 3621
Portland, OR 97208-3621

Either Party may change their recipient of notice at any time by designating a new recipient in a letter delivered to the other Party.

30. Right of First Refusal.
So long as Lewis has any obligation to Bonneville pursuant to Section 27(b) and (c), Bonneville shall have the right of first

refusal to purchase from Lewis Firm Capability on the same terms and conditions (price, amount of power, and duration of sale) under which Lewis has entered into a memorandum of sale (or similar document) evidencing an intention to consummate a sale of the Firm Capability. The price shall be adjusted by Lewis to reflect costs which will not be incurred by Lewis should the Firm Capability be sold to Bonneville. Bonneville shall have ninety (90) days from the date Lewis proffers the Firm Capability to exercise this right of first refusal. At any time during this ninety (90) day period, Bonneville may make an offer to purchase Firm Capability under any terms and conditions it deems appropriate, and any such offer shall not revoke Bonneville's right to purchase Firm Capability under the terms and conditions originally proffered by Lewis.

31. Arbitration.

(a) The Parties agree to submit to binding arbitration all issues, disputes and controversies arising out of this Contract except for those set forth in Section 31(b), which the Parties have the legal authority to arbitrate, and which cannot be otherwise resolved by discussions between the Parties.

(b) The Parties agree that all issues, disputes, and controversies arising out of Sections 6(e), 8(a), 8(b)(1) through (3), and 8(c)(1)(C) regarding matters occurring before Commercial Operation Date; Sections 8(d)(2), 10(a)(1)(A) and (B), and 10(b)(1)(C) through (F); 14(a)(3) and (4) but not for matters of cost determinations; and Sections 10(b)(1)(A) and (B) regarding Bonneville's decision to terminate Initial Project Construction, shall not be subject to arbitration.

(c) All arbitration proceedings under this Contract shall be conducted as follows:

(1) The Party which believes that agreement by the Parties on any issue, dispute or controversy regarding this Contract is unlikely may invoke binding arbitration by sending written notification to the other Party stating that it is invoking binding arbitration, and stating the issues to be resolved.

(2) The Party receiving notice of arbitration shall have ten (10) days from the date of the notice of arbitration to notify in writing the Party invoking arbitration of any additional issues that remain unsolved and warrant arbitration.

(3) The Parties shall have fifteen (15) days from the date the notice of arbitration is mailed to mutually agree upon an arbitrator.

(4) If the Parties are unable to mutually agree on an arbitrator, then no later than twenty-five (25) days after the date of notice of arbitration, each Party shall by

written notification to the other Party designate a representative.

(5) No later than thirty-five (35) days after the date of notice of arbitration, the Parties' representatives shall send to the Parties written notice stating the arbitrator the representatives have mutually selected to conduct the proceeding.

(6) If the Parties' representatives are unable to mutually agree on an arbitrator, either Party may petition the Chief Judge of the U.S. District Court for the District of Oregon to appoint an arbitrator.

(7) No later than twenty (20) days after the appointment of the arbitrator, however appointed, each Party shall submit to the arbitrator in writing the proposal it recommends to resolve each of the issues that are the subject of the arbitration. These written proposals shall be accompanied by a written submittal, not exceeding fifty pages (not including exhibits) stating the rationale for the Party's proposed resolution. If requested, the arbitrator may permit the submittals to exceed fifty pages for good cause shown.

(8) The arbitrator shall decide the issues subject to arbitration based on the written submittals only, unless the arbitrator decides that a hearing to receive oral testimony is necessary.

(9) The conduct of any hearing to receive oral testimony is left to the sole discretion of the arbitrator, subject to the right of both Parties to have representatives present at any hearing.

(10) No later than thirty (30) days after the written submittals by the Parties, the arbitrator shall issue a written opinion deciding each of the issues submitted for arbitration. In deciding each issue, the arbitrator shall select one of the two proposed resolutions submitted by the Parties on each issue, and shall have no authority to fashion any alternative proposal or resolution.

(11) The Parties agree that they will not submit for arbitration, and that the arbitrator has no authority to decide, questions of law.

(d) When resolving issues submitted for arbitration, the arbitrator shall choose the proposed resolution for any disputed issue which most completely conforms with the principles set forth in Section 7(a) through (i). Should the arbitrator determine that both of the proposed resolutions for any disputed issue equally conform to the principles set forth in Section 7(a) through (i), then the arbitrator shall choose the proposed resolution that

will result in the most efficient integration of the Project Output into the FCRPS.

(e) The Parties agree that when arbitration is used to resolve any issues arising out of Sections 9(a) or (b), the arbitrator shall be an engineer with hydroelectric project experience. As part of the annual budget process under Sections 9(a) or (b), the Parties will endeavor to mutually agree on an engineer with hydroelectric project experience for the succeeding budget year or years, to serve as the arbitrator for issues arising out of Sections 9(a) or (b) of this Contract.

(f) Each Party shall pay the costs of preparing and presenting its own case in any arbitration proceeding, including any fees paid to the Party's representative, and such costs shall not be Project Power Costs. The cost of the arbitrator shall be treated as a Project Power Cost.

(g) During the pendency of any arbitration proceeding, the Parties shall fulfill all of their obligations under this Contract, and to the Project on the basis of the operating procedures and the Annual Operating Budget in effect when the issue, dispute or controversy being arbitrated arose.

(h) Any cost which has been charged against the Project as a Project Power Cost, and which is disallowed by the arbitrator, shall be promptly reimbursed to the appropriate fund or account for the Project by the Party which charged such cost.

32. Governing Law.
This Contract shall be interpreted, governed by, and construed under the laws of the State of Washington, except to the extent governed by Federal laws.

33. Regulation.
It is agreed by the Parties that Lewis, in undertaking the planning, financing, construction, acquisition, operation and maintenance of the Project, must comply with the requirements of the Bond Resolution and all licenses, permits and regulatory approvals necessary for such planning, financing, construction, acquisition, operation and maintenance. It is also agreed that this Contract is made subject to the provisions of all such licenses, permits and regulatory approvals.

34. Right to Act.
It is recognized by the Parties that the planning, financing, construction, acquisition, operation and maintenance of the Project must be consistent with requirements of the Bond Resolution and comply with all licenses, permits and regulatory provisions necessary for such planning, financing, construction, acquisition, operation and maintenance; and it is therefore agreed that, notwithstanding any provision of this Contract, no action by Bonneville shall require

Lewis to act in any manner inconsistent with any such requirements or to refrain from acting as thereby required; and if Bonneville shall fail to make recommendations or act with respect to any matter in connection with which action is required to be taken pursuant to any of the foregoing, or if any matter is in dispute between the Parties Lewis shall have the right to take such action as is appropriate to assure compliance with the foregoing. The costs of such action, or any portion thereof, shall not be included in Project Power Costs until agreed to by Bonneville or ordered by the arbitrator.

35. Clean Air Act Allowances.
Lewis shall use its best efforts to obtain and market, pursuant to applicable law, any pollution allowances or credits attributable to the Project, including, but not limited to, any allowances that may be allocated to Lewis by the United States Environmental Protection Agency pursuant to the Federal Clean Air Act Amendments of 1990, Public Law 101-549. Unless otherwise agreed by the Parties, Lewis shall apply all proceeds of such marketing to the payment of Project Power Costs, for the Term of this Contract.

36. Required Provision.
All offerings, or promotional material for the sale or issuance of Cowlitz Falls Bonds, which may be offered by Lewis to fund its activities pursuant to this Contract, shall contain the following language:

"These obligations are not, nor shall they be construed to be, general obligations of the United States, nor are such obligations intended to be or are they secured by the full faith and credit of the United States."

37. Hold Harmless.

(a) Lewis Obligation to Hold Bonneville Harmless.
Lewis shall indemnify and hold Bonneville harmless from all claims, damages, losses, liability and expenses arising from the negligent or other tortious acts or omissions of Lewis, its employees, agents, or contractors arising under this Contract.

(b) Bonneville Obligation to Hold Lewis Harmless.
Bonneville shall indemnify and hold Lewis harmless from all claims, damages, losses, liability and expenses arising from the negligent or other tortious acts or omissions of Bonneville, its employees, agents, or contractors arising under this Contract.

38. Waivers.
Except as otherwise provided herein or as agreed by the Parties, no provision of this Contract may be waived except as documented or confirmed in writing. Any waiver at any time by a Party of its right with respect to a default under this Contract, or with any other

matter arising in connection therewith, shall not be deemed a waiver with respect to any subsequent default or matter. Either Party may waive any notice or agree to accept a shorter notice than specified in this Contract. Such waiver of notice or acceptance of shorter notice by a Party at any time regarding a notice shall not be considered a waiver with respect to any subsequent notice required under this Contract.

39. Invalid Provision.
The invalidity or unenforceability of any provision of this Contract shall not affect the other provisions hereof, and this Contract shall be construed in all respects as if such invalid or unenforceable provisions were omitted.

40. No Unspecified Third-Party Beneficiaries.
There are no third-party beneficiaries of this Contract. Nothing contained in this Contract is intended to confer any right or interest on anyone other than the Parties, their respective successors, assigns and legal representatives.

41. Amendment.
No change, amendment or modification of any provision of this Contract shall be valid unless set forth in a written amendment to this Contract signed by both Parties. This Contract shall not be amended, modified, or otherwise altered in any manner which will reduce the payments pledged as security for the Cowlitz Falls Bonds or extend the time of such payments provided herein or which will in any manner materially impair or adversely affect the rights of the holders from time to time of the Cowlitz Falls Bonds.

42. Headings Not Binding.
The headings and captions in this Contract are for convenience only and in no way define, limit, or describe the scope or intent of any provisions or sections of this Contract.

43. Agreement of the Parties.
This Contract represents the entirety of the agreement between the Parties, and this Contract supersedes any prior written or oral agreements between the Parties.

44. Interpretation of Contract.
The Parties agree that both Parties drafted this Contract, and that if any ambiguities arise in the later interpretation of this Contract, such ambiguities shall not be construed against either Party as the sole drafter of the Contract.

45. Computation of Days.
For purposes of this Contract, all references to days contained herein shall mean calendar days.

46. Federal Acquisition Regulations.
For purposes of determining the applicability of the Federal Acquisition Regulations, the Parties agree that nothing contained in this Contract shall establish, or be construed as establishing, a contractual relationship between Bonneville and any contractor or subcontractor hired by Lewis in conjunction with the Project.

47. Prior Contracts.
This Contract (Contract No. DE-MS79-91BP93212) amends and restates the Power Purchase Contract (Contract No. DE-MS79-90BP93106) executed by and between the Parties on January 28, 1991, and is intended to and shall represent the full and entire agreement of the Parties, notwithstanding any prior written or oral agreements, including the Power Purchase Contract.

48. Signature Clause.
Each Party hereto represents that it has the authority to execute this Contract and that it has been duly authorized to enter into this Contract.

IN WITNESS WHEREOF, the Parties hereto have executed this Contract in counterparts.

UNITED STATES OF AMERICA
Department of Energy
Bonneville Power Administration

/s/ Sue P. Hickey

By Sue F. Hickey
Assistant Administrator
for Energy Resources

23 May 1991

Date 23 May 1991

PUBLIC UTILITY DISTRICT NO. 1
OF LEWIS COUNTY, WASHINGTON

By Leonard M. Allen

Title Vice President

Date May 23, 1991

By John L. Kostick

Title President

Date May 23, 1991

ATTEST:

/s/ Leonard M. Allen
Vice President
May 23, 1991

By David P. Knight

Title Secretary

Date May 23, 1991

/s/ John L. Kostick
President
May 23, 1991

/s/ David P. Knight
Secretary
May 23, 1991

(VS6-PMCE-+531)

POWER SCHEDULING PROCEDURES

1. Annual Schedules.
No later than each January 1, Lewis shall submit to Bonneville the following information:

   (a) the schedule of maintenance for the Project for the succeeding Operating Year.

   (b) all other operational and maintenance information for the succeeding Operating Years which the Parties have determined to be pertinent to integrating the Project Output into the Federal Columbia River Power System (FCRPS).

2. Project Availability.
Lewis will provide to Bonneville by 1200 hours on each workday the following information:

   (a) an estimate of the hourly amounts of electric power and energy to be produced at the Project during the following day or days; and

   (b) the actual hourly amounts of electric power and energy produced at the Project during the previous day or days.

3. Scheduling Project Output.
Project Output shall be scheduled using the following procedures.

   (a) No later than five (5) days before the first day of each month, Bonneville shall provide Lewis with preschedules of Project Output which Bonneville requests for each hour of each day of the month.

   (b) No later than 1200 hours each day, Bonneville shall provide Lewis with the final schedule of Project Output which Bonneville requests for each hour of the next day.

   (c) Bonneville may request a revision of a final schedule up to one clock hour prior to the hour of the requested revision of the final schedule. Lewis will make all reasonable efforts to comply with the requested revision.

(d) If conditions change from those used in preparing the pre-schedules or final schedules, and such changes make compliance with the pre-schedule or final schedule impracticable, Lewis shall promptly notify Bonneville of the nature of the change, its expected duration, and their affect on Project Output available to Bonneville. Lewis and Bonneville shall revise the final schedules as necssary to take into account the change.

(e) Lewis and Bonneville shall endeavor to keep changes in the schedules to a minimum. It is the Parties intention to comply with requests for schedule changes to the maximum extent possible, so as to maximize the power production of the Project and the FCRPS in the most efficient manner possible.

4. Report of Outages.

(a) Lewis shall report to Bonneville as soon as reasonably possible any generation or transmission outages, scheduled or emergency, at the Project and shall use best efforts to return the Project to service as soon as possible.

(b) Bonneville shall report to Lewis as soon as reasonably possible any transmission outage or FCRPS problem, scheduled or emergency, which would affect the Project, and shall use best efforts to return the Bonneville facilities to service as soon as possible.

5. Maintenance Schedule.
To the extent possible, Lewis and Bonneville shall schedule maintenance outages at the Project and on the transmission system in such a manner as to minimize adverse impacts on the FCRPS, on the Project, and Lewis' system.

6. Coordinated Operations.

(a) At Bonneville's request and to the extent possible, Lewis will adjust Project generation levels to optimize the operation of FCRPS, subject to FERC License and operating constraints.

(b) In the event of scheduled and unscheduled outages of the FCRPS which renders receipt of Project Output by Bonneville impracticable, Lewis may adjust its generation levels to optimize the operation of the Project and service to the customers of the Lewis.

7. Revisions of This Exhibit.
This Power Scheduling Procedures Exhibit may be revised from time to time by agreement of the Parties.

(VS6-PMCE-+531)

Exhibit B
Contract No. DE-MS79-91BP
Procurement No.
Lewis County PUD
Effective at 2400 hours on

CALCULATION OF RESIDUAL VALUE

1. Project Equipment Not Capitalized.

   (a) Prior to acquiring equipment for the Project which is not capitalized, including vehicles and boats, the Parties shall mutually agree upon the expected useful life of such equipment.

   (b) If the expected useful life of such equipment will extend beyond the Term, the Parties shall calculate the remaining cost of such equipment as follows:

      (1) The cost of acquiring such equipment shall be allocated in equal amounts to all months of the expected useful life of such equipment.

      (2) Upon Contract expiration, costs allocated to months of the expected useful life of such equipment after Contract expiration shall be summed, and shall constitute the remaining cost of such equipment.

2. Project Prepayments.
   Should insurance, taxes or any other Project expense be prepaid during the Term, and should the period for which prepayment was made extend beyond the Term, then the Parties shall calculate the remaining cost of such prepayment as follows:

   (a) The amount of any such prepayment shall be allocated equally to each month during the period for which prepayment was made.

   (b) Upon expiration of the Contract, prepayment amounts allocated to months after Contract expiration shall be summed and shall constitute remaining costs of such prepayment.

(VS6-PMCE-+531)

EXHIBIT C

TRIAL TECHNICAL STANDARDS FOR INTERCONNECTION OF SMALL GENERATING RESOURCES TO THE BPA TRANSMISSION SYSTEM

December 27, 1989

TRIAL TECHNICAL STANDARDS FOR INTERCONNECTION OF SMALL GENERATING RESOURCES TO THE BPA TRANSMISSION SYSTEM

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December 27, 1989

TRIAL TECHNICAL STANDARDS FOR INTERCONNECTION OF SMALL GENERATING RESOURCES TO THE BPA TRANSMISSION SYSTEM

INTRODUCTION

The Bonneville Power Administration (BPA) has prepared standards for the integration of small generating resources directly or indirectly connected to the BPA system. The purpose of these standards is to ensure the safe operation, integrity, and reliability of the BPA electrical system and of the facilities with which it is interconnected.

These standards are not intended as a design specification or an instruction manual. Many requirements, particularly the protective equipment and relaying, will need to be considered on a case-by-case basis because the BPA system is so varied.

It is important to remember that the physical laws which govern the behavior of electric systems do not recognize defined lines of electric facility ownership. Thus, for a well engineered interconnection, it is mandatory that the systems be studied and analyzed critically without regard to ownership. BPA will review the interconnection plans with the owner/operator of the small generating resource and any interconnected utility. Factors such as short circuit currents, transient voltages, stability requirements, prudent utility practices, safety, operations, and maintenance will be considered.

I. SCOPE

These standards cover small generating resources directly connected to the BPA system or to another utility's system which is directly connected to BPA's system. Based on these standards, the small generating resource and the interconnected utilities must demonstrate that generation on, or connected to, their system will not degrade the reliability and safe operation of the BPA system or another utility's system directly connected to BPA.

A. Definition

A small generating resource (SGR) is a generating resource which has a production capacity of 50 Megawatts or less of electric power.

B. Application of Codes, Policies and Laws

Installations shall be in compliance with the National Electrical Code (ANSI C1), National Electrical Safety Code (ANSI C2), Western Systems Coordinating Council and Northwest Power Pool minimum operating reliability criteria, State and local electrical codes, BPA Reliability Criteria, and the General Contract Provisions of the agreement between BPA and the SGR or interconnected utility, as applicable.

BPA will not interconnect a SGR until completing an appropriate decisionmaking process, which may include preparation of an environmental document under the National Environmental Policy Act (42 U.S.C. & 4321 et seq.). The owner of the SGR may be asked to prepare the environmental document for BPA, or to submit relevant environmental information, before BPA will decide whether to offer a connection.

BPA, in cooperation with the interconnected utility and the SGR, shall determine that the BPA system is properly protected from any problems or disturbances that occur on the SGR's system and that the operation of the SGR is safe and reliable with respect to the BPA system before an interconnection is closed and interconnected operation may begin. At its discretion, BPA may waive those requirements which can be met by equivalent measures to maintain the reliability and safe operation of the BPA system.

Each of the parties involved in a direct or indirect connection of an SGR to the BPA System is responsible for the design, construction, reliability, protection, and safe operation of its own system.

Design of the SGR facilities should be supervised by a Registered Professional Engineer.

C. Interconnection Point

The interconnection point is that point on the BPA system where the facilities of the SGR or the transferring utility are connected with BPA. (The nominal voltage at the interconnection point will normally be at the lowest voltage available at that point.)

The term "interconnection point" is used in a general sense in these standards. The term is used somewhat differently in small resource wheeling agreements. The wheeling agreements define the "Point of Integration" as the point where the project output is made available to BPA, while the "Point of Interconnection" is the point where the developer makes the project output available to a third party utility so it can be wheeled to BPA.

II. PERFORMANCE STANDARDS

The SGR (owner) shall mitigate complaints such as audible noise, radio, television and telephone interference and voltage fluctuations caused by the SGR.

Each party involved in the connection of the SGR shall design, construct, operate, maintain, and use its facilities in conformance with prudent utility practices.

A. Electric Disturbances

Each party shall:

1. Minimize the effect of all electric disturbances such as, but not limited to:

a. an abnormal flow of power which may interfere with the interconnected electric systems;

b. the transient overvoltages that occur during ground faults.

2. Minimize the degradation of the reliability of the interconnected electrical system.

B. Voltage Regulation and Power Factor

1. The nominal high-side voltage of the SGR's step-up transformer shall be the same as the nominal or agreed upon voltage of the Interconnection Point for SGR's directly connected to the BPA system.

2. The SGR shall impose no restrictions on BPA's capability to operate within a system voltage range of five percent above or below nominal for voltages equal to or less than 25-kV, and 10 percent above or below nominal for voltages greater than 25-kV.

3. Synchronous generators shall:

a. Be rated at 0.95 power factor or lower, lagging and leading.

b. Coordinate with voltages as scheduled by BPA within the reactive capability of the machine. Design and operation of voltage regulators shall be coordinated with other voltage and reactive control equipment on the system.

4. Induction generators or groups of induction generators shall have a suitable reactive power supply to maintain a power factor that is acceptable to BPA and the other interconnected utilities. If the SGR induction generators can be self-excited during fault conditions, the SGR must provide protective relaying to promptly trip the generator.

5. Inverters or groups of inverters shall have a suitable reactive power supply to maintain unity power factor, or other power factor that may be acceptable to BPA and other interconnected utilities.

C. Voltage Flicker

The SGR shall limit to acceptable levels the production of voltage fluctuations (flicker) at the interconnection point.

D. Harmonics Requirements

The SGR shall limit to acceptable levels the production of total harmonic current distortion (THCD) and individual harmonic current distortion injected or coupled into the interconnected system. Harmonic current distortion is defined as the ratio of the rms value of the harmonic current to the rms value of the fundamental alternating current.

The harmonic current distortion of the SGR supplied power shall be limited to the levels indicated below:

Individual Harmonic (h) Current Distortion, %				THCD, %
$h<9$	$9\leq h<23$	$23\leq h<35$	$35\leq h$	
4.0	1.5	1.0	0.5	5.0

These values are for long term operation. For short term testing, and startup, these values may be exceeded. A level of 50% higher current distortion will be allowed for up to one hour.

Exception to these requirements will be considered on an individual basis.

E. Phase Unbalance

Generators shall not cause phase current unbalance greater than 10 percent.

F. Speed/Frequency Control/Damping

1. Speed governors shall be provided when the SGR is to be used to supply loads while operating in isolation from a power system synchronizing source.

2. Speed governors shall be designed and adjusted:

   a. so that they do not react to cause frequency and power swings to develop during normal system conditions, and

   b. so that any swings that do occur during system disturbances are well damped.

III. GENERAL REQUIREMENTS

A. Safety and Operation

All BPA and customer switchgear that could be opened, leaving equipment energized by the SGR, must be visibly marked so that all maintenance crews are aware of the potential hazard.

A switch shall be provided that physically and visibly opens the integrating circuit to the SGR. The device:

1. Must simultaneously open all phases to the SGR.

2. Must be accessible by BPA personnel at any time without notice to the SGR and without restricted access.

3. Must be lockable in the open position by BPA.

BPA personnel may lock the switch in the open position:

1. If it is necessary for the protection of maintenance crew personnel when working on de-energized circuits.

2. If the SGR's equipment presents a hazardous condition.

3. If the SGR's generating equipment interferes with the operation of the BPA transmission system.

B. Inspection, Test, Calibration, and Maintenance

The SGR owner has full responsibility for the inspection, testing, calibration and maintenance of the SGR generating and protection equipment.

Drawings, specifications, maintenance records and test records of SGR equipment pertinent to interconnected operation shall be made available to BPA and any interconnecting utility. In some instances, certain tests may be required by BPA. The type of test and required results will be determined by BPA on an individual basis.

Inspection, test, and calibration of the SGR generating and protection equipment shall be completed before initial operational acceptance and subsequently on a periodic basis. Maintenance intervals shall be based on prudent utility practice.

C. Grounding

Grounding requirements shall be in compliance with the National Electrical Code and any applicable State and local codes. Adequate station grounding shall be provided by the SGR.

If there is any possibility during normal or outage conditions of the SGR energizing an ungrounded system in the event of a disturbance on the connected BPA transmission line, the SGR must provide a grounding current source to the BPA system. In some instances, a fault detection scheme using three potential transformers may be substituted for the grounding current source, subject to approval by BPA.

In all cases the protection schemes and equipment necessary for the protection of the BPA system shall be approved by BPA. (See Section IV Protection Guidelines.)

D. Metering and Telemetering

The following revenue metering requirements apply to an SGR with which BPA has a contract to purchase or wheel its generated power.

1. The revenue metering shall be specified by BPA.

2. Specific revenue metering requirements will depend on contractual constraints, wheeling arrangements, designated point of delivery, scheduling requirements, and other factors (see Section F).

3. Metering requirements for an SGR will be the same as for any similarly sized BPA point of interconnection. This includes the overall metering scheme, the type of equipment used, and the overall metering accuracy for metering purposes. Required metering could include: recording three-phase kW-hours, kVAR-hours, KW demand and an RMS (Revenue Metering System) remote, complete with a surge-protected telephone line. Potential transformers and current transformers shall be 0.3% accurate metering class accuracy for the burden of the metering circuit. It may also include automatic data acquisition (telemetering) for scheduling, operating reserve responsibilities and/or billing requirements, Automatic Generation Control (AGC) and two-way metering.

4. At BPA's election, these devices may be owned, operated, and maintained by BPA.

5. Calibration of metering shall occur periodically. All parties may witness calibration.

E. Isolating and Synchronizing

The SGR shall not energize a BPA line that is de-energized unless the energization is specifically approved by the BPA dispatcher.

Whenever a disturbance occurs on the BPA system, interconnecting utility, or the SGR system, the disturbance must be isolated before equipment damage occurs.

If, for any reason, the system source is disconnected from the SGR (fault conditions, line switching, etc.), the switching device connecting the SGR to the system must open and not reclose until approved by the BPA dispatcher.

The SGR shall synchronize its equipment to the BPA and/or interconnected utilities' system.

The SGR shall clear its generator before the normal system reclosing time. The SGR shall not reclose out of synchronization with the BPA and/or interconnected utilities' system.

F. Scheduling

BPA's Power Supply and Scheduling Division will define scheduling requirements on an individual basis. The SGR operators shall adhere to these requirements.

G. Underfrequency/Voltage Relays

Relays must not trip the SGR for major system disturbances but must allow the generator to ride through system frequency and voltage transients.

In order to meet these requirements, the following relay settings are required.

Relay Type	Setting/Delay
1. Undervoltage	0.8 pu or above - 2 second delay minimum 0.75 pu - 0.8 sec. delay minimum 0.7 pu - 0.25 sec. minimum Below 0.7 pu - no restrictions on setting or delay
2. Overvoltage	1.2 or below - 2 second delay minimum 1.25 - 0.8 second delay minimum 1.3 - 0.25 second delay minimum above 1.3 - no restrictions on setting or delay
3. Underfrequency	59.5 Hz or above, 10 minutes min. trip 59.0 Hz - 4 minutes minimum trip 58.5 Hz- 1.2 minutes minimum trip 58.0 Hz- 0.3 minutes minimum trip 57.5 Hz- 0.06 minutes minimum trip 57.0 Hz- or below-no restrictions
4. Overfrequency	60.5 Hz or below - 10 minutes 61.0 Hz- 4 minutes 61.5 Hz- 1.2 minutes 62.0 Hz- 0.3 minutes 62.5 Hz- 0.06 minutes 63.0 Hz or above - no restrictions

IV. PROTECTION GUIDELINES

The protective devices (relays, instrument transformers, circuit breakers, etc.) required to protect BPA's or an interconnected utility equipment shall be specified by BPA, the SGR, and the interconnecting utility. At BPA's election, these devices may be owned, operated, and maintained by BPA. The settings of the protective devices shall be jointly agreed to by BPA, the SGR, and the interconnecting utility. The interconnected utility is fully responsible for the protection of all of its own equipment associated with the interconnection. The SGR shall protect its generator and all of its associated equipment from any and all disturbances or malfunctions.

The BPA system is so varied that there is no one single plan of service typical of all cases. The complexity of the protection required must be determined for each project. The following factors will influence the protection scheme:

1. The output (MVA) and the machine characteristics of the generator.

2. The electrical size of the SGR with respect to the load served by the transformer connected to the BPA system.

3. System protection requirements at the interconnection point and elsewhere on the system as a result of the interconnection configuration (both normal and alternate configurations).

4. The type of transformer electrical connections used to integrate the SGR.

5. The insulation level of the system served by the SGR.

Typical protection requirements for a 4 MW SGR connected to a BPA utility customer system with an 8 MW minimum load are shown in figure 1. Additional equipment such as a grounding transformer may be required in this example if the output of the generation approximately matches or exceeds the load.

In all cases, the protection schemes and equipment required for the protection of the BPA system shall be approved by BPA.

APPENDIX A

APPLICABLE STANDARDS

ANSI

C1	National Electrical Code
C2	National Electrical Safety Code
C37.4	Definitions...AC High Voltage Circuit Breakers
C37.16	Requirements...AC Low Voltage Circuit Breakers
C37.30	Definitions...Air Switches, Insulation, and Bus Supports
C37.48	Guide...Cutouts, Fuse Links, Secondary Fuses
C37.90	Relays...Electric Power Apparatus
C37.91	Relays...Transformers
C37.95	Relays...Utility Consumer Interconnections
C57.12.00	Distribution, Power Transformers...General Requirements
C57.12.01	Distribution, Power Transformers...Dry Type
C62.1	Surge Arrestors
C57.13	Instrument Transformers

WSCC Minimum Operating Criteria

NW Power Pool

National Environmental Policy Act

Pacific Northwest Regional Power Act

IEEE Guide 80 Guideline to Substation Grounding

Cogeneration and Small Power Production Guidelines for Public Power Systems, November 1980, American Public Power Association

IEEE Guide for Interfacing Dispersed Storage and Generation Facilities with Electric Utility Systems — ANSI/IEEE Standard 1001-1988

December 27, 1989

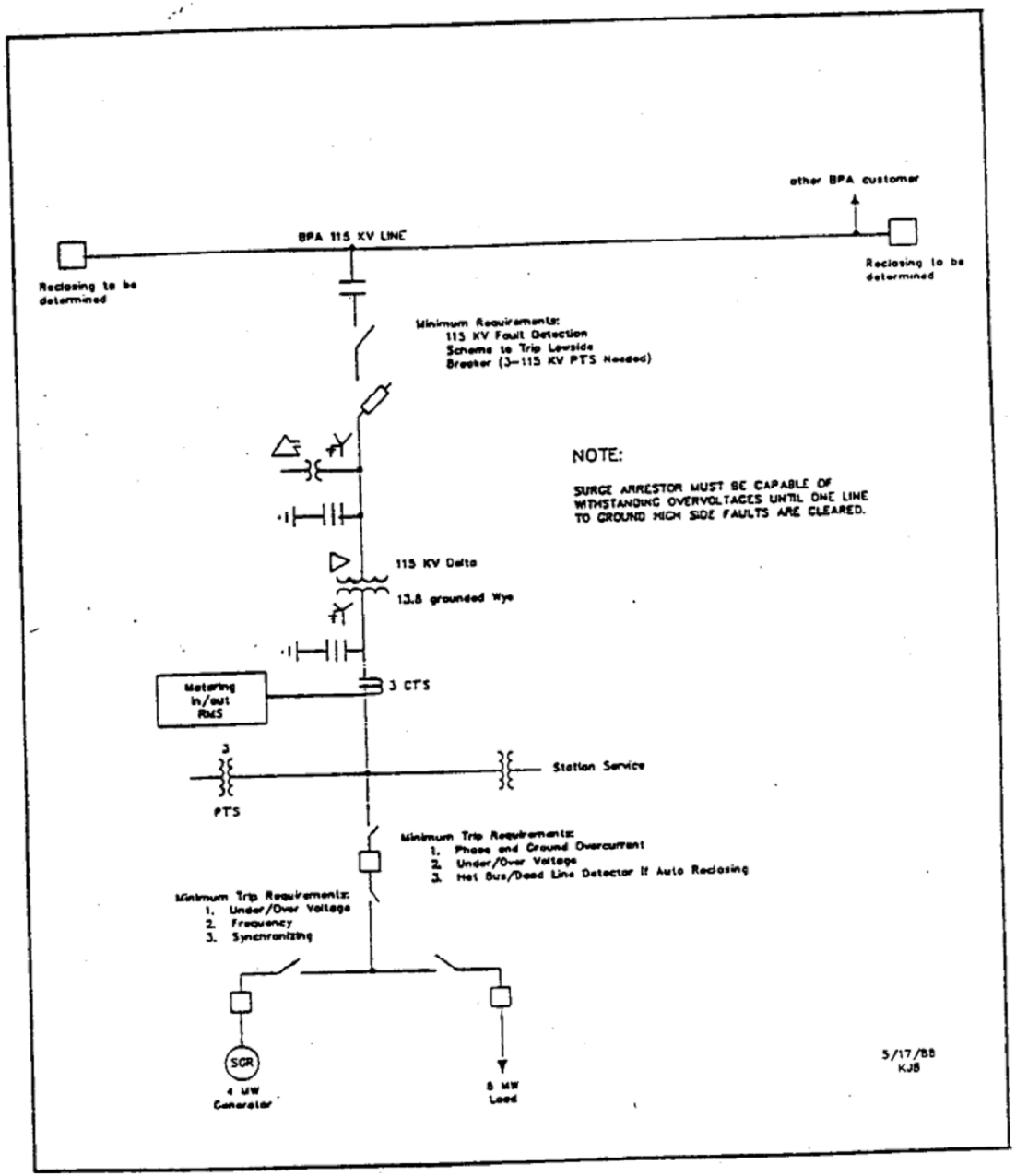

Fig. 1
Typical Example of Protection Requirements for a SCR

(03-16-82)

PROVISIONS REQUIRED BY STATUTE OR EXECUTIVE ORDER

1. Contract Work Hours and Safety Standards.

This contract, if and to the extent required by applicable law and if not otherwise exempted, is subject to the following provisions:

(a) Overtime Requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, shall require or permit any laborer or mechanic in any workweek in which such worker is employed on such work to work in excess of 8 hours in any calendar day or in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times such worker's basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of 40 hours in such workweek, as the case may be.

(b) Violation; Liability for Unpaid Wages; Liquidated Damages. In the event of any violation of the provisions of subsection (a), the contractor and any subcontractor responsible therefor shall be liable to any affected employee for such employee's unpaid wages. In addition, such contractor and subcontractor shall be liable to the Government for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the provisions of subsection (a) in the sum of $10 for each calendar day on which such employee was required or permitted to be employed in such work in excess of eight hours or in excess of such employee's standard workweek of 40 hours without payment of the overtime wages required by subsection (a) above.

(c) Withholding for Unpaid Wages and Liquidated Damages. Bonneville may withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in subsection (b) above.

(d) Subcontracts. The contractor shall insert in any subcontracts the clauses set forth in subsections (a) through (c) of this provision and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

(e) Records. The contractor shall maintain payroll records containing the information specified in 29 CFR 516.2(a). Such records shall be preserved for 3 years from the completion of the contract.

2. Convict Labor. In connection with the performance of work under this contract, the contractor agrees, if and to the extent required by law and if not otherwise exempted, not to employ any person undergoing sentence of

PRELIMINARY INITIAL CONSTRUCTION COST ESTIMATE

COWLITZ FALLS PROJECT COST FORECAST SUMMARY /a

DESCRIPTION	Jan 91
Scheduled Construction Start	June 91
Direct Construction Cost	66,072,000
Turbine and Generator	11,643,000
Spillway Gate Hoist	357,000
SCADA System	200,000
Subtotal	78,272,000
Transmission Line	1,204,000
Taxes	6,000,000
Escalation	3,536,000
Project Contingency	7,983,000
Subtotal	96,995,000
Engineering & Constr. Management	13,309,000
Land Acquisition	3,167,000
Project Mitigation	2,987,000
Owner Administration	2,364,000
Owner Contingency	615,600
Subtotal	119,437,600
Lewis Investment /b	11,606,090
TOTAL PICCE	$131,043,690

a/ Documentation of the costs for each line item is included on the following pages

b/ Lewis' Investment in the project is subject to BPA review. Through January 1991 the investment is $12,216,937. This figure has been reduced by 5% to recognize exclusion of some expenses upon completion of BPA's review.

1/7/91

COWLITZ FALLS HYDROELECTRIC PROJECT
JOB NUMBER 18942

TOTAL PROJECT COST FORECAST

LINE NO.	DESCRIPTION	TOTAL SEPT. 1990	TOTAL JAN. 1991	TO GO SEPT. 1990	TO GO JAN. 1991
1	Scheduled Construction Start Date:	6/91	6/91	6/91	6/91
		$	$	$	$
	Construction Cost				
2	Turbines and Generators	12,402	12,168	12,102	11,643
3	Spillway Gate Hoist	350	357	350	357
4	SCADA System	0	200	0	200
5	Remainder of Construction	64,782	66,072	64,782	66,072
6	Subtotal	77,534	78,797	77,234	78,272
7	Transmission Line	1,180	1,204	1,180	1,204
8	Taxes	5,904	6,000	5,881	6,000
9	Escalation	4,820	3,536	4,820	3,536
10	Project Contingency	7,845	7,983	7,845	7,983
11	Subtotal	97,283	97,520	96,960	96,995
12	Engineering and Construction Mgmt.	18,141	18,141	14,003	13,309
13	Land Acquisition	3,468	3,468	3,193	3,167
14	Project Mitigation	2,987	2,987	2,987	2,987
15	Owner Administration	1,816	2,364	1,816	2,364
16	Owner Contingency	560	616	560	616
17	TOTAL	124,255	125,096	119,519	119,438

Note: See Sheet No. 2 for explanatory notes.

1/7/91

COWLITZ FALLS HYDROELECTRIC PROJECT
JOB NUMBER 18942

NOTES TO PROJECT COST FORECAST

LINE NO.	NOTES
1	The project is scheduled to start construction on June 1, 1991 and to complete construction on March 1, 1994.
2	The September, 1990 estimate assumed Notice for Release for manufacture (NRM) on July 1, 1991. The January 1991 estimate assumes NRM on March 1, 1991 in order to avoid delivery delays and associated delay in project completion. Escalation reduced accordingly. In accordance with Purchase Contract Change Order No. 1, since NRM was not issued by December 1, 1990, $225,000 was paid to the supplier. This $225,000 will apply against the total purchase price.
3	Gate hoist increased to allow for escalation.
4	SCADA system added to project scope following the meeting with BPA on October 9, 1990. The SCADA system will improve reliability of operation of the project. In particular, the proper spillway operation, hence flood level control, would be made more dependable with computer rather than manual operation.
5	Construction cost increased to allow for escalation at the rate of 6 percent per year for the months of October - December 1990. Quotes have been received for the trashrake, gantry crane, all gates and all major electrical equipment. The estimate has been adjusted accordingly.
7	Transmission line increased to allow for escalation.
8	Washington sales tax included at the rate of 7.5 percent of all construction costs. The September 1991 "TO GO" was in error due to the assumption that sales tax had been paid on the $300,000 engineering fee paid the turbine and generator supplier. To date, the sales tax has not been paid.

NOTES TO PROJECT COST FORECAST
(Continued ...)

9 Escalation included from January 1991, to the midpoint of the construction schedule. The October 1990 estimate included escalation from October 1990 to the midpoint of construction. The total for escalation has decreased since money was moved from this item into the non-firm construction costs.

10 Contingency included at the rate of 10 percent on all construction-related costs and 2 percent of the turbine and generator supply.

12 Engineering and construction management unchanged in total. The "TO GO" amount includes all unpaid invoices from November 1990 through completion of the project.

13 Land acquisition unchanged. January "TO GO" is reduced by $26,000 to account for re-optioning costs which were paid in December. Contingency of 15 percent is included in the item total.

14 Project mitigation unchanged. See attached sheet for details.

15 Owner administration adjusted to add cost attributable to project of power line to provide construction power and to modify the District's general and administrative costs. See attached sheet for details.

16 Owner contingency included at 10 percent of project mitigation plus owner administration except that contingency for wildlife mitigation is included at 20 percent.

1/8/91

Owner Administration

	Total Sept. 1990	Total Jan. 1991
District Staff*	$ 550,000	$ 838,000
Staff Consultant**	375,000	375,000
Consulting Board	95,000	95,000
Disputes Review Board and Other Legal	250,000	250,000
Permit Fees	60,000	60,000
Small Tools and Furnishings	150,000	150,000
Operator Training***	156,000	156,000
District Costs (January-June 1991)****	180,000	143,000
Construction Power Distribution Line and Temporary Substation	0	297,000
TOTAL	$1,816,000	$2,364,000

*The District Staff figure is an amount projected from the 1991 budget using a 4% annual cost of living adjustment and a 51.8 labor benefit loading. A&G will reset each budget period during the construction period. The amount resulting from the budget process will be a not to exceed amount. A&G is calculated using the methodology agreed upon by BPA and Lewis in the letter agreement dated January 21, 1991.

**Includes staff consultant, Bob Sato, for a 36-month duration.

***During last six months prior to Commercial Operation.

****September 1990 figure includes costs for period October to June. January 1991 figure includes 32% adder for indirect A&G as defined by A&G methodology. These are Project holding costs and may or may not be financed.

1/7/91

PROJECT MITIGATION

	TOTAL SEPT. 1990	TOTAL JAN. 1991
Wildlife Mitigation	$ 794,000	$ 794,000
Fisheries	288,000	288,000
Recreation	1,835,000	1,835,000
Landscaping	20,000	20,000
Work from DOE Settlement	50,000	50,000
TOTAL	$ 2,987,000	$ 2,987,000

LEWIS INVESTMENT IN COWLITZ FALLS

(Summary /a)

Investments through 11/90 (Nov. Financials)	11,771,868
Accounts Payable for Dec 90	440,481
Payroll through Dec 90	10,588
Less non-project Transmission	(192,000)
Accounts Payable for Jan 91	186,000
Total	12,216,937

a/ Detailed documentation of all expenses is available for BPA review.

COWLITZ FALLS ADMINISTRATIVE AND GENERAL OVERHEAD COST METHODOLOGY
As proposed by Bonneville to Lewis County PUD

EXHIBIT F

Purpose of Establishing a Methodology

Section 7(d)7 of the contract between Bonneville and Lewis County PUD (District) requires a methodology for general and administrative (G&A) costs to be developed within one year after execution of the contract. However, in the memo from Sue Hickey to Gary Kalich, dated October 31, 1990, it was stated that Bonneville intended to pursue completion of the G&A cost methodology prior to execution of the contract.

The District prepared a proposed methodology using estimated hours for indirect labor costs and using a labor percentage applied to other G&A costs. Bonneville has developed the following methodology based on the Lewis proposal.

Bonneville proposes using the labor percentage of Cowlitz Falls Direct Payroll to Total Payroll as the basis for allocating both indirect labor and other indirect costs. As suggested in the District proposal, there will be a charge for office space used for the project. The full proposal is explained under General Principles, below.

Various Methodologies

In accordance with the contract, there are actually four periods of time when the methodology should be examined for applicability.

The first is the Pre-Contract period. During this period there should be no G&A expenses allocated to Bonneville. Pre-Contract sunk costs are costs directly charged to the Project. An after the fact G&A allocated charge was never contemplated.

Second is the period of time beginning when the Contract is signed and ending with the bond fund release of holding costs. During this period of time, the Holding Period, Bonneville should pay for G&A costs. The G&A costs will be calculated as a percentage of indirect labor (loaded) added to a percentage of specific indirect costs added to an office space fee. The District will bill Bonneville monthly by applying a fixed rate to unloaded direct labor dollars charged to the project. See attachment I.

Third is the construction period. During the construction period, the District will capitalize G&A costs. The methodology developed for the Holding Period costs will apply during the construction period. However, Bonneville will examine the methodology when the construction estimate has been finalized, prior to start of construction, to determine if any changes should be made. The G&A costs will be calculated, as described above, and capitalized. For bond financing purposes, G&A costs for the construction period will be the Indirects as specified on Attachment II, page 2. However, each year of the construction period, the G&A amount will be recalculated using the final budget resulting from the budget process. The amount resulting from the budget process will be a "not to exceed" amount. See attachment II.

Attachment I

Using 1991 Budget information the indirects will be calculated as follows:

HOLDING PERIOD

Labor Percentage

Direct CFP Payroll	$109,376	= 3.75%
Total District Payroll	$2,917,569	

Indirect Labor				Total
351,749.16	x 1.518 =	533,955.22	x .0375 =	20,023

	1991 Budget	3.75% Allocation	Total
Indirect Other			
US West	$30,000	$1,125	
AT&T	3,000	113	
SCAN	7,500	281	
Telephone	40,500	1,519	
Postage (As agreed)		200	
PO Box Rental	295	11	
Mail Machine Rental	700	26	
Stationery	13,000	488	
Material & Supplies-G&A	10,000	375	
Stationery & Supplies	23,995	1,100	
Copier Maintenance	10,000	375	
Office Machine Maint	2,700	101	
Computer Maintenance	5,000	188	
Banking Services	1,600	60	
Maint & Banking Services	19,300	724	
System 36 Equipment	11,000	413	
Personal Computers	15,000	563	
Office Equipment	25,000	938	
Truck Shop Test Equip	18,000	675	
Replacement Equipment	69,000	2,589	
Total Indirect Other	152,795		5,932
Office Space			9,000
Total Indirect Charges			34,955

To be billed as a percentage (%) of unloaded CFP charged to the project each month.

$$\frac{34,955}{109,376} = 32\%$$

BWeller:bw:5297:1/16/91 (VS10-DSAC-3155F)

1/8/91

Owner Administration

	Total Sept. 1990	Total Jan. 1991
District Staff*	$ 550,000	$ 838,000
Staff Consultant**	375,000	375,000
Consulting Board	95,000	95,000
Disputes Review Board and Other Legal	250,000	250,000
Permit Fees	60,000	60,000
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**Includes staff consultant, Bob Sato, for a 36-month duration.

***During last six months prior to Commercial Operation.

****September 1990 figure includes costs for period October to June. January 1991 figure includes 32% adder for indirect A&G as defined by A&G methodology. These are Project holding costs and may or may not be financed.

Cowlitz Falls Project

Owner Administration Cost Construction Period

District Staff

	June-Dec 91	1992	1993	Jan-Mar 94
Direct	$90,887.66	$162,039.71	$168,272.01	$43,626.08
51.8% Overhead	$47,079.81	$83,936.57	$87,164.90	$22,598.31
	$137,967.47	$245,976.28	$255,436.91	$66,224.39
Indirect	$26,235.77	$46,219.02	$47,477.03	$12,187.41
Total	$164,203.24	$292,195.30	$302,913.94	$78,411.80

Grand Total $837,724.28

CONSTRUCTION PERIOD ESTIMATE FOR LABOR AND G & A COSTS

	June-Dec 91	1992	1993	Jan-Mar 1994
CFP Direct	$155,807.41	$162,039.71	$168,272.01	$174,504.30
Total of Budget	$2,952,568.49	$3,045,296.92	$3,138,025.35	$3,230,753.79
Percentage	5.28%	5.32%	5.36%	5.40%
Annual Direct Labor				
Based on 1991 Rates	$348,195.79	$360,217.81	$372,239.83	$384,261.84
times	1.518	1.518	1.518	1.518
	$528,561.21	$546,810.64	$565,060.06	$583,309.47
times	5.28%	5.32%	5.36%	5.40%
Total indirect labor	$27,908.03	$29,090.33	$30,287.22	$31,498.71
ndirect Other				
Total Indirect Other				
152795 x %	$8,067.58	$8,128.69	$8,189.81	$8,250.93
Office Space	$9,000.00	$9,000.00	$9,000.00	$9,000.00
	$17,067.58	$17,128.69	$17,189.81	$17,250.93
Total Indirect Charges	$44,975.61	$46,219.02	$47,477.03	$48,749.64
Monthly	$3,747.97	$3,851.58	$3,956.42	$4,062.47
	x 7 months	x 12 months	x 12 months	x 3 months
	$26,235.77	$46,219.02	$47,477.03	$12,187.41
	$44,975.61	$46,219.02	$47,477.03	$48,749.64
divided by	$155,807.41	$162,039.71	$168,272.01	$174,504.30
	29%	29%	28%	28%

Lewis County PUD Cowlitz Falls Project

Attachement II Page 4

Owner Administration 01/18/91

Estimated District Costs for Five-Month Holding Period in 1991

Direct Labor

Annual Direct Labor	$109,376.09	
Divided by	12	
Monthly Direct Unloaded Labor	$9,114.67	
times	5	
5 Months Direct Unloaded Labor	$45,573.37	
times	1.518	
5 Months Direct Loaded Labor		$69,180.38

Indirect Charges

Annual Indirect	$34,955.32	
Divided by	12	
Monthly Indirect Charges	$2,912.94	
times	5	
5 Months Indirect Charges		$14,564.72
Total Direct Labor and Indirect Charges		$83,745.09

Estimated Other Contractual Services for Five Months 1991

Contractor		Five Months
Armstrong-VanderStoe	Attorneys (Local)	$7,500.00
Gordon-Thomas	Attorneys (Contracts)	$10,000.00
Marsh-Mundorf	Attorneys (Transmission)	$7,000.00
Ritts-Brickfield	Attorneys (FERC)	$10,000.00
Robt. Sato	Engineer	$15,000.00
Applied Demographics	Environmental/PR	$10,000.00
Total Other Contractual Charges		$59,500.00
Total Est. District Costs for the Holding Period 1991		$143,245.09

EXHIBIT G

SAMPLE CALCULATION

COMPARISON OF LEWIS PUD WHOLESALE POWER COST and COST OF COWLITZ FALLS POWER

A. Definitions

- FPC = Cost of power from Cowlitz Falls; all costs properly chargeable to the Project pursuant to the FERC System of Accounts or its successor.1/
- FELCC = Firm Energy Load Carrying Capability of Cowlitz Falls as determined by Coordinated System Planning under the Pacific Northwest Coordination Agreement or successor agreement.
- APC = Average Cowlitz Falls Project Power Cost in cents/kwh.
- LTCR = Lewis' total monthly capacity requirements (from annual financial statement).
- LTER = Lewis' total monthly energy requirements (from annual financial statement).
- LCG = Lewis' total monthly capacity generation (from annual financial statement).
- LEG = Lewis' total monthly energy generation (from annual financial statement).
- LCP = Lewis' total monthly wholesale capacity purchases.
- LEP = Lewis' total monthly wholesale energy purchases.
- CR = Applicable BPA wholesale rate in effect at the time of comparison for capacity purchases by Lewis.
- ER = Applicable BPA wholesale rate in effect at the time of comparison for energy purchases by Lewis.
- LEC = Lewis' total monthly wholesale energy purchase cost.
- LCC = Lewis' total monthly wholesale capacity purchase cost.
- LTPC = Lewis' total monthly wholesale power purchase cost.
- AWPC = Lewis' Average Annual Wholesale Power Cost in cents/kwh

B. Determination of Cowlitz Falls Average Power Costs

APC = FPC / FELCC = 12,000,000 / 194,000,000

APC = 6.19 cents/kwh

C. Determination of Lewis' Average Wholesale Power Purchase Cost

1. Determine Total Wholesale Purchases (capacity and energy)

LCP = LTCR - LCG
LEP = LTER - LEG

	Total Requirements		Mill Creek Hydro		Wholesale Purchases	
Month	Eng (kwh) (LTER)	Cap (kw) (LTCR)	Eng (kwh) (LEG)	Cap (kw) (LCG)	Eng (kwh) (LEP)	Cap (kw) (LCP)
Jan	67,932,371	132,357	163,200	600	67,769,171	131,757
Feb	72,970,059	147,097	306,000	600	72,664,059	146,497
Mar	56,286,938	127,440	288,000	600	55,998,938	126,840
Apr	54,119,753	122,910	54,000	200	54,065,753	122,710
May	51,342,157	108,701	158,400	300	51,183,757	108,401
Jun	48,082,885	96,444	147,600	300	47,935,285	96,144
Jul	44,682,923	84,556	0	0	44,682,923	84,556
Aug	48,584,631	89,088	0	0	48,584,631	89,088
Sep	48,518,124	92,868	0	0	48,518,124	92,868
Oct	53,582,580	115,434	0	0	53,582,580	115,434
Nov	60,739,182	120,005	92,400	200	60,646,782	119,805
Dec	74,178,055	179,746	246,000	600	73,932,055	179,146
Total	681,019,658	1,416,646	1,455,600	3,400	679,564,056	1,413,246

2. Determine Total Wholesale Power Purchase Cost

LCC = LCP * CR
LEC = LEP * ER
LTPC = LCC + LEC + Any wholesale power cost adjustments

	Wholesale Purchases		Wholesale Rates		Wholesale Power Cost		
Month	Enrg (kwh) (LEP)	Cap (kw) (LCP)	Enrg (c/kwh) (ER)	Cap ($/kw) (CR)	Energy ($) (LEC)	Capacity ($) (LCC)	Total ($) (LTPC)
Jan	67,769,171	131,757	1.84	3.46	1,246,953	455,879	1,702,832
Feb	72,564,059	146,497	1.84	3.46	1,337,019	506,880	1,843,898
Mar	55,998,938	126,840	1.84	3.46	1,030,380	438,866	1,469,247
Apr	54,065,753	122,710	1.44	3.46	778,547	424,577	1,203,123
May	51,183,757	108,401	1.44	3.46	737,046	375,067	1,112,114
Jun	47,935,285	96,144	1.44	3.46	690,268	332,658	1,022,926
Jul	44,642,923	84,556	1.44	3.46	643,434	292,564	935,998
Aug	48,584,631	89,088	1.44	3.46	699,619	308,244	1,007,863
Sep	48,518,124	92,868	1.84	3.46	892,733	321,323	1,214,057
Oct	53,582,580	115,434	1.84	3.46	985,919	399,402	1,385,321
Nov	60,646,782	119,805	1.84	3.46	1,115,901	414,525	1,530,426
Dec	73,932,055	179,146	1.84	3.46	1,360,350	619,845	1,980,195
Total	679,564,058	1,413,246			11,518,169	4,889,831	16,408,000
Plus Adjustments							
Low Density Discount			5.0%				820,400
Total Wholesale Power Purchase Cost							$15,587,600

3. Calculate Lewis' Average Wholesale Power Cost

AWPC = LTPC / LEP = $15,587,600 / 679,564,058

AWPC = 2.29 cents/kwh

D. Comparison of Project Power Cost to Lewis Wholesale Purchase Power Cost

1. IF APC > AWPC ;

Lewis is not required to dedicate Coulitz Falls to serve load

2. IF APC < AWPC ;

Lewis is required to dedicate Coulitz Falls to serve load

1/ Based on the actual costs of the Project from the preceeding Operating Year, a 20-year forecast of the cost of Firm Capability from the Project shall be prepared using generally accepted forecasting methodologies then in use, as mutually agreed by the Parties.

Lewis County PUD

Cowlitz Falls Master Plan & Benchmarking

Number of Projects	Project Value
120	**$105.9M**

Lewis County PUD

1. Executive Summary

HOME

Lewis County Public Utility District No. 1 (LCPUD) owns and operates the Cowlitz Falls Project, including reservoir, dam, powerhouse, switchyard and recreational sites. Constructed between 1991 and 1994, Cowlitz Falls has been operating as intended, but has been bothered by latent design issues and increasingly showing signs of normal ageing.

LCPUD contracted Black & Veatch to assemble all the separate lists of recommendations (from previous and ongoing studies and assessments) into a master list of projects, prioritize that list in an objective manner, and recommend an execution year for each of the projects. LCPUD also asked for a benchmarking study to verify whether current investment and staffing levels were in a normal range given LCPUD's size.

Investment benchmarking was done in two ways. First, Black & Veatch analyzed data from publicly available financial reports from utilities with high proportions of hydropower in their energy mix that also owned and operated their own hydropower stations. Black & Veatch looked for three correlations: $/MW, $/hydro facility and $/unit, and found that only number of units owned and operated by the utility reasonably explained variation in spending. The sample size was small and not used herein. Second, Black & Veatch performed an industry survey of capital, routine O&M and non-routine O&M investment, and found that for powerhouses with less than 5 turbine-generator units, the expected investment for Lewis County PUD at the 2-unit Cowlitz Falls is $5.4M (R=52%, n=34). Of the surveyed 62% said that they are not realizing investment towards protection from increased unit cycling, suggesting the $5.4M is inadequate for the long term.

Staffing benchmarking was done in two ways. First, Black & Veatch reviewed publicly available industry studies. One study from 2017 proposed a parametric estimate based on full-time-equivalent (FTE) per MW of generation. Personal categories included craft labor, supervisors, engineers, managers; in functions "Operations, Plant Maintenance, waterways and Dams, Buildings and Grounds maintenance, Investment, On-Site Support, and Public Affairs and Regulatory". Fish and wildlife professionals are included. From numbers derived from the study, a 70 MW facility such as Cowlitz Falls might be expected to employ close to 17 full time equivalent personnel. Second, Black & Veatch performed an industry survey of staffing on and off-site. The expected total staffing for Lewis County PUD's 2-unit Cowlitz Falls is 12.4 FTE (SD-12.3, n=38). Excluding biologists and parts & recreation staff, the expected O&M staffing for Lewis County PUD's 2-unit Cowlitz Falls is 11.6 FTE (SD=11.8, n=38).

In accordance with the recommendations of the Oroville Independent Forensic team Report, State Dam Safety Officials (ASDSO) Peer Review Program and the ISO 55001 asset management framework, Black & Veatch recommended to prioritize projects based on the risk reduction; before vs. after intervention. Risk was defined as Consequence of Failure x Likelihood of Failure, where Consequence of Failure was defined in conjunction with LCPUD in separate dimensions: Power Purchaser Impact (loss of generation), Regulatory Compliance, Environment, Reputation, and Financial (to LCPUD). Black & Veatch subject matter experts (SMEs) scored all projects for their complexity (i.e. burden to project managers) and capacity for risk reduction in all the dimensions. An optimization model simulating different constraints produced two different Master Plans.

The Base Case (FY 2020 budget $5.6M with no carryover allowed, one FTE project manager) gave a scenario to compare against. The Case 2 Master Plan (budget of $6M per year, two FTE project managers) showed a dramatic and consistently lower total system risk immediately from 2021 onwards compared to the Base Case Master Plan. The two scenarios clearly demonstrate that the ability to execute projects (i.e. having and adequate number of full-time project managers) would give the greatest "bang for the buck" to Lewis County and stakeholders.

Lewis County PUD

2. Demonstration of Adherence to Contract Principles

HOME

Introduction

The purpose of this section is to demonstrate that the Master Plan is aligned with the Power Purchase Contract between Bonneville Power Administration and Lewis County Public Utility District, #DE-MS79-90BP93106, dated 10/30/90. The two Principles most applicable to asset management appear to be:

6. (b) "At all times operate the properties of the Project...in an efficient, reliable manner and at the lowest reasonable cost consistent with the objective of achieving efficient integration....and the longest reasonable operating life for the Project...";

6. (c) "Maintain, preserve and keep...the properties of the Project....in reasonably good repair, working order and condition".

In accordance with LCPUD instructions, Black & Veatch performed a search within standards for explicit definitions of the underlined, key phrases in the Principles. The survey of 33 often-used standards showed no explicit definitions of these phrases. The same survey revealed that adjectives "reasonable", "normal", "unusual", "suitable", "good", "efficient", and "reliable" are used frequently but leave interpretation to the reader in every instance found. A full list of the survey standards may be found in the Appendix.

Reasonable Operating Life

The Electric Power Research Institute (EPRI) report EM-3435 Hydropower Reliability Report, prepared by Black & Veatch and Motor Columbus, equated "reliability" with "availability of the machine", i.e. no in forced outages and not down for maintenance. The average availability of the 28 plants / 195 units studied was 94.8% with a standard deviation of 6.6%, with "only a slight decrease in availability with age," but with two low points of availability: at 25-30 years and at 60-65 years, representing "rewinding outrages and major overhauls" (EPRI, 1984, p. I-6). A "reasonable" level of reliability might be interpreted as a unit having an availability 88.2% or better (i.e. within one standard deviation of the average, a subset that includes 84% of hydropower machines). Excessive outages, whether driven by serious failures, inability to procure (obsolete) components once they've failed, or other factors, would not be keeping with the Principles.

Four federal agencies (USACE, USBR, BPA, WAPA) report Federal Replacements was written in part for "asset managers that plan maintenance, replacement, and refurbishment activities," (WAPA, USBR, USACE & BPA, 2017, sect. 1 p. 5). The report develops "each Unit of Property/Plant Item...expected to be replaced within the period of study [100 years] is assigned a service life," (2017, sect. 4 p. 1). The selection of a service life was done via statistical analysis from federal databases coupled with "multi-agency SME meeting and interviews," (2017, sec. 2 p. 3). The strong implication by the participation, sourcing and authorship of the report, is that federal agencies would interpret "reasonable operating life" for a given asset as one that approximately equals the "service life" chosen in Federal Replacements.

Lewis County PUD

2. Demonstration of Adherence to Contract Principles (2 of 2)

HOME

Reasonably Good Condition

CEATI hydroAMP Consolidated Equipment Condition Guide, written under a steering committee composed of Bonneville Power Administration, Hydro-Quebec, Seattle City Light, the Bureau of Reclamation, and the Army Corps of Engineers. The Guide provides a methodology to score the condition of hydropower asset as a Condition Index on a scale of 1-10. From Table 1-2, assets are said to have an "Condition Equipment Rating" of "Good" if and only if the Condition Index is between 8-10. "Good" is defined as: "There is a high level of confidence that the component will perform well under normal operating conditions. Continue current O&M practices. Repeat condition assessment on normal frequency. Consider performing Tier 2 tests when convenient to provide good base line data for comparison with future tests," (CEATI, 2013, sect. 1 p. 8t). Based on the Principles, LCPUD may be obligated to take corrective action whenever an asset's Condition Equipment Rating falls below "Good"; corrective action should be executed whenever there is doubt about performance under normal operating conditions (generally understood as any condition inside the generator's capability curve but outside hydraulic rough zones and excluding fault conditions).

Lewis County PUD

3. Support for Risk Informed Decision Making

HOME

The groundwork for an acceptable methodology was laid down in the 1979 Federal Guidelines for Dam Safety and grew into a federal policy of risk-informed decision making. The US Bureau of Reclamation wrote in 2011: "*Risk-informed procedures are used to assess the safety of Reclamation structures, to aid in making decisions to protect the public from the potential consequences of dam failure, to assist in prioritizing the allocation of resources, and to support justification for risk reduction actions where needed,*" (USBR, 2011, p. 2). "Risk Estimation" is done by "assigning probability and consequences of failure," (USBR, 2011, p. 3). Whereas the Federal Guidelines were written specifically for dams and related hydraulic structures, the concept of estimating risk by assigning probability and consequence of failure can be extended to cover all Project assets.

Lewis County PUD

4. Risk Scoring System

HOME

SECTION OVERVIEW

This section describes the risk scoring system adopted for, or the risk-based scoring system that gives an objective way of prioritizing projects. Project complexities are also discussed.

Black & Veatch worked with LCPUD to score the pre (before the project is completed) and post (after the project is completed) risk for each project in the Master Plan.

Likelihood of Failure (LoF) is based on a time horizon scale with possible scores ranging from 1-5.

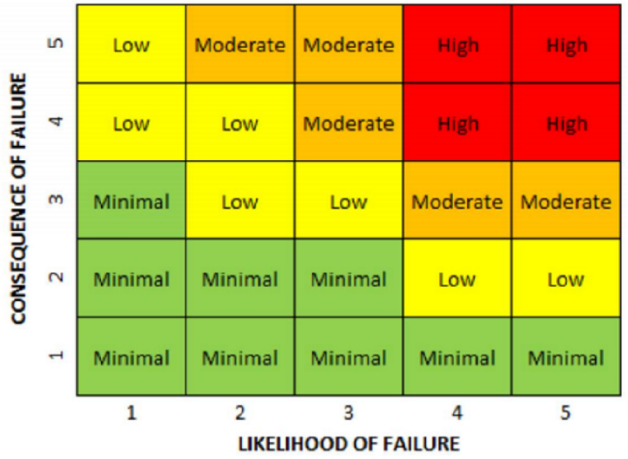
Consequence of Failure (CoF) are resolved into six (6) difference dimension: Power Purchaser Impact (impact to Bonneville Power Administration), Regulatory Compliance, Environment, Reputation, Customer Perception & Community Impact, Safety (Public & Employee), Financial Impact (impact to LCPUD).

Total Risk is defined as the combination of the likelihood of an event occurring (LoF) and the impact or consequence caused by the event (CoF). Risk management is a systematic method for identifying, assessing, mitigating and monitoring the risks involved in any activity or process. The total risk score is then used to understand where is the project lands on the risk score heat map. The image to the right shows the different zones based on Total Risk.

Project complexity refers to the time that the project manager spends on a given project. This is broken down into 3 scales: low, medium and high.

Position in schedule is a function of LoF x CoF, and availability of funds in any given year. The program tries to fit as much risk reduction it can under the yearly budget and project management constraint without going over. Sometimes a low risk project just fits earlier. Components that are scored in terms of obsolescence, are subject to a full replacement cost (i.e. higher Financial impact) and longer lead time (i.e. higher Purchaser impact) compared to simple part replacement.

- LoF Definitions
- CoF Definitions
- Project Complexities



LoF Definitions

For this analysis, the risk event is predominately a deterioration-related asset failure that results in an outage and requires repair or replacement. All research says that age in years is a poor predictor of failure. In this project, age is at most used for a justification for creating a long-term action item. This was accomplished by working directly with LCPUD through multiple face-to-face meetings and going through the projects to understand the impact of the project related assets if they fail. The Likelihood of Failure (LoF) criteria was used to score the pre and post risk for each project in the Master Plan.

LoF's are generally based on past experiences of the SME's. This is meant to be a live activity that is updated with ongoing condition assessment data and so the probability of failures are re-assessed. Components that are observed to be "better" than industry average condition might be provided a lower LoF whereas components that appear to be deteriorating more quickly will be assigned a higher LoF. For example, generator rewind. The industry says that we should anticipate a rewind roughly every 30-40 years. At this moment, the rewind appears with a placeholder and reasonable budgetary figure. If at the 30-year mark (2024), condition assessments show perfect condition and no partial discharge trending then the LoF will be adjusted to reflect that current state. If at 40 years it is still in perfect condition, then again, the LoF score would not arbitrarily be adjusted upwards.

Ranking	Score	Definition
Very High	5	Event will occur within a year
High	4	Event will occur at least once every 1-5 years
Medium	3	Event will occur at least once every 6-15 years
Low	2	Event will occur at least once every 16-50 years.
Very Low	1	Event will occur at least once every 51-100+ years.
NA	0	NA

CoF Definitions

Black & Veatch worked with LCPUD to develop the Consequence of Failure (CoF) criteria used to score the pre (before the project is completed) and post (after the project is completed) risk for each project in the Master Plan.

Score	Purchase Power Impact	Regulatory Compliance	Environment	Reputation, Customer Perception, & Community Impact	Safety (Public & Employee)	Financial Impact
5	18+ months no generation	Cease of operation imposed by regulatory agency	Long term damage to environment	Negative media coverage at national level. Public inquiry.	Fatality(ies)	Over $5m
4	9 to 18 months no generation	Restricted operations imposed by regulator agency	Major effect on the environment	Sustained negative media coverage. Issues raised by State Government.	Permanent disability	$1m - $5m
3	3 to 9 months no generation	Received a notification for corrective action or imminent NOV	Localized effect on environment with recovery of damage within one year	Negative media coverage at State level.	Major injury or temporary disability	$350,000 - $1,000,000
2	1 to 3 months no generation	Reportable inscident that is self reported and corrected	Minor impact on the environment	Some negative local media coverage. Issue raised with public officials	Minor reportable injuy	$10,000 - $350,000
1	no generation loss	No Violations	Insignificant impact on the environment	Complaints to Customer Service	None	Less than $10,000
0		NA	NA	NA	NA	NA

Project Complexities

Black & Veatch worked with LCPUD to develop the Project Complexity criteria used to evaluate each project in the Master Plan. Project Complexity refers to the time that the project manager spends fulfilling the roles of a project manager, engineering manager, and project support administrator and is not based solely on the cost of a project. Low, Medium, and High complexities were the factors used in the Project Prioritization model. Project Complexity can also be described in terms of full-time project manager person-weeks. A low complexity project is 1/7 * 52 = 7.5 person-weeks, a medium complexity project is 0.25 * 52 = 13 person-weeks, and a high complexity project is 52 person-weeks.

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5. Project Prioritization (1 of 2)

HOME

This section describes the Project Prioritization Dashboards for viewing the model results of the prioritized AIP based on multiple budget levels.

5.1 Modeling Assumptions
Provides a description of assumptions used within the model and a discussion of how to interpret the model results.

5.2 Interpreting the Results
Explains what the results are for the Base Case, Case 1, and Case two and also how they can be compared.

5.3 Base Case
Showcases the model using the status quo budget and project manager constraints with the B&V optimization.

5.4 Base Case vs. Case 2
Compares the Base Case to Case 2: similar budget and an updated project manager constraint with the B&V optimization.

5.5 Scenario Comparison
Provides a comparison of the budget levels that were run in the model. The comparison is based on maximizing risk reduction while maintaining the desired annual spend along with limiting the number of projects managed per year to 14.

DASHBOARDS

- Modeling Assumptions
- Interpreting the Results
- Base Case
- Base Case vs. Case 2
- Master Plan Scenario Comparison
- Master Plan Schedule Comparison
- Master Plan Project Explorer
- Master Plan Annual Spend

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5. Project Prioritization (2 of 2)

HOME

5.6 Schedule Comparison
This provides the schedule impact comparison for the scenarios selected by the user.

5.7 Project Explorer
This provides the details of the project that is selected by the user.

5.8 Annual Spend
This provides the annual spend for each scenario in a large table to review the results.

DASHBOARDS

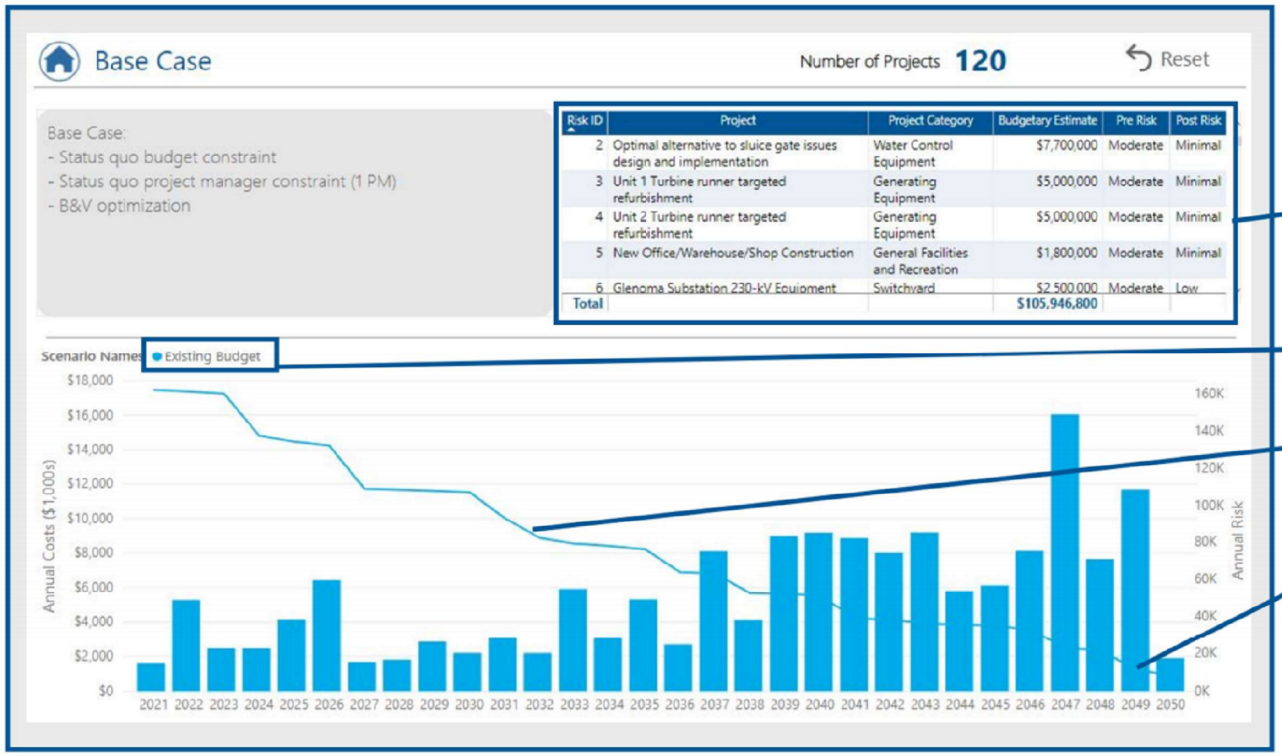
- Modeling Assumptions
- Interpreting the Results
- Base Case
- Base Case vs. Case 2
- Master Plan Scenario Comparison
- Master Plan Schedule Comparison
- Master Plan Project Explorer
- Master Plan Annual Spend

Modeling Assumptions

- Escalation Rate - 3.00%
- Start Year of Study Period - 2021
- Last Year of Study Perior - 2050
- Annual Project Execution (1 Project Manager) - the number of projects a Project Manager is able to manage each year
  - High Complexity - 1/Year
  - Medium Complexity - 4/Year
  - Low Complexity - 7/Year
- Maximize Risk Reduction per Dollar Spent
- Duplicate projects for Unit 1 and Unit 2 are constrained such that they are scheduled in consecutive years

Interpreting the Results

The results shown on the results pages similar to the one below are to show how the total risk (CoF x LoF) changes over times as projects are scheduled. The difference in the lines in the chart highlights the additional risk reduction that results from different prioritization scenarios. The bars in the chart show the amount of money that needs to be spent in order to achieve the total risk reduction.



Project details of the projects scheduled in the chart

Scenario being displayed in the chart

Line in chart represents Annual Risk per year that results from projects being scheduled

Bar in chart represents Annual Cost for scheduled projects per Year

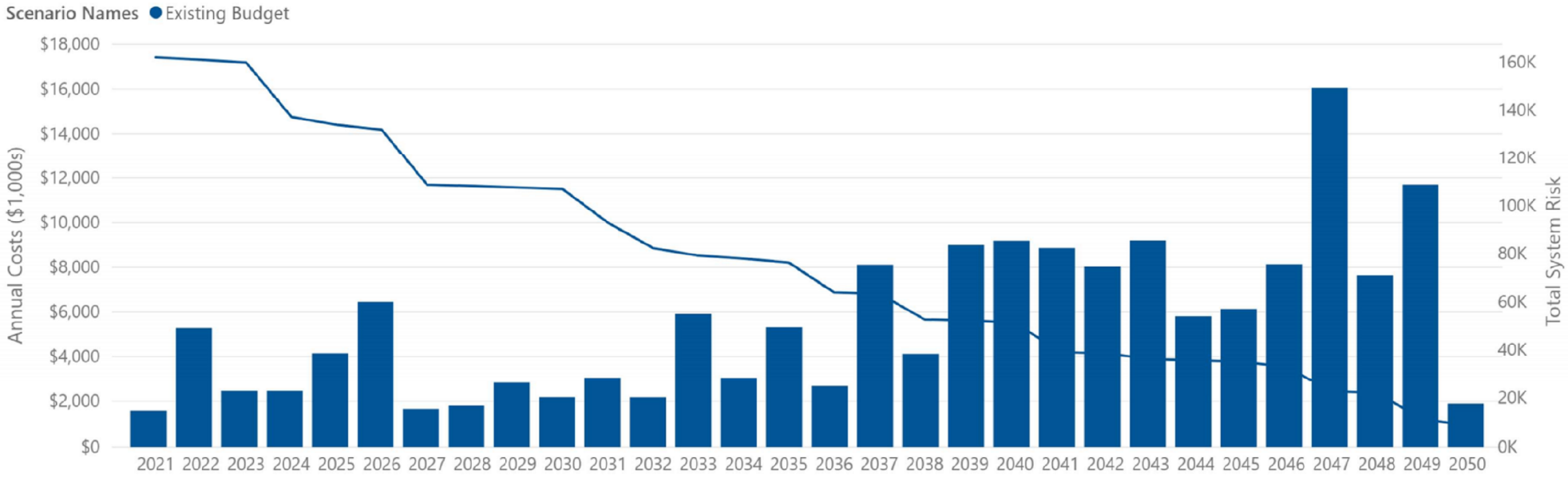
Base Case

Number of Projects **120**

Reset

Base Case:
- Status quo budget constraint
- Status quo project manager constraint (1 PM)
- B&V optimization

Risk ID	Project	Project Category	Budgetary Estimate	Pre Risk	Post Risk
2	Optimal alternative to sluice gate issues design and implementation	Water Control Equipment	$7,700,000	Moderate	Minimal
3	Unit 1 Turbine runner targeted refurbishment	Generating Equipment	$5,000,000	Moderate	Minimal
4	Unit 2 Turbine runner targeted refurbishment	Generating Equipment	$5,000,000	Moderate	Minimal
5	New Office/Warehouse/Shop Construction	General Facilities and Recreation	$1,800,000	Moderate	Minimal
Total			**$105,946,800**		



Base Case vs. Case 2

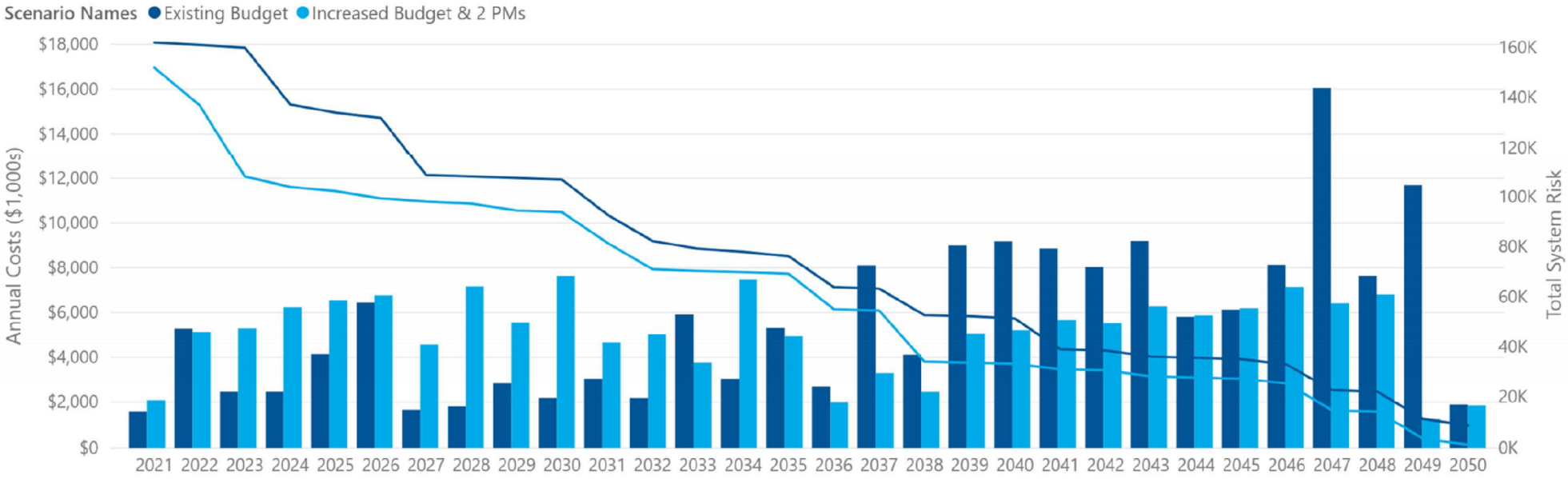
Number of Projects **120**

Reset

Base Case:
- Status quo budget constraint
- Status quo project manager constraint (1 PM)
- B&V optimization

Case 2:
- Project manager constraint (2 PMs)
- B&V optimization

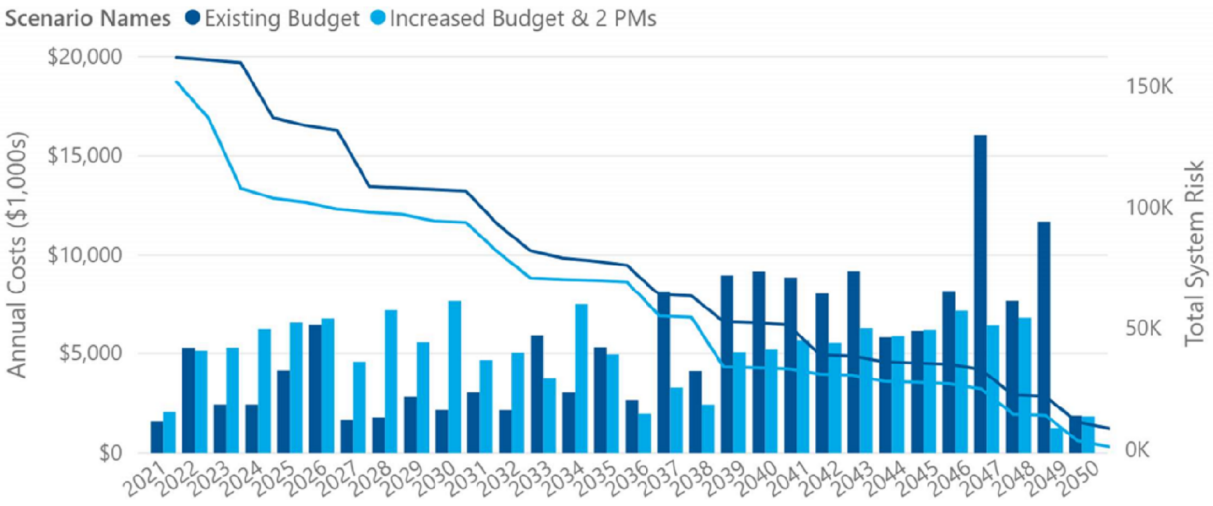
Risk ID	Project	Project Category	Budgetary Estimate	Pre Risk	Post Risk
2	Optimal alternative to sluice gate issues design and implementation	Water Control Equipment	$7,700,000	Moderate	Minimal
3	Unit 1 Turbine runner targeted refurbishment	Generating Equipment	$5,000,000	Moderate	Minimal
4	Unit 2 Turbine runner targeted refurbishment	Generating Equipment	$5,000,000	Moderate	Minimal
5	New Office/Warehouse/Shop Construction	General Facilities and Recreation	$1,800,000	Moderate	Minimal
Total			**$105,946,800**		



Master Plan Scenario Comparison

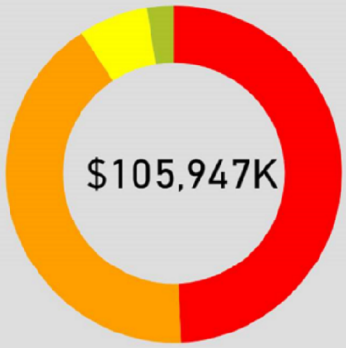
Number of Projects **120**

Reset



Risk ID	Project	Project Category	Budgetary Estimate	Pre Risk	Post Risk	Risk Reduction	Ris... Th...
2	Optimal alternative to sluice gate issues design and implementation	Water Control Equipment	$7,700.00K	Moderate	Minimal	695	
3	Unit 1 Turbine runner targeted refurbishment	Generating Equipment	$5,000.00K	Moderate	Minimal	195	
4	Unit 2 Turbine runner targeted refurbishment	Generating Equipment	$5,000.00K	Moderate	Minimal	195	
5	New Office/Warehouse/Shop Construction	General Facilities and Recreation	$1,800.00K	Moderate	Minimal	546	
6	Glenoma Substation 230-kV Equipment Refurbishment/Replacement	Switchyard	$2,500.00K	Moderate	Low	145	
8	Tailrace stabilization & Rock Removal	Dam	$2,000.00K	Moderate	Minimal	109	

Replacement Cost by Risk
(2019 $1,000's)



High Risk
$46,640

Moderate Risk
$47,491

Low Risk
$7,976

Minimal Risk
$3,840

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6. Staffing Benchmarking

HOME

High-level data from one study (Paidipati, 2017, p. v) results in an average of 0.247 FTE/MW employed in "operation and maintenance of the existing hydropower fleet". For a utility with 70 MW of hydropower (i.e. LCPUD), one might expect on the order of **17 full-time equivalent personnel**. Personnel categories include Admin-Clerical, Craft-Unskilled, Craft, Supervisory, Engineering, Managerial, and Professional, with Craft-Skilled being the largest category at nearly 40%. Eight hydropower job functions were analyzed within the O&M workforce: Operations, Plant Maintenance, Waterways and Dams, Buildings and Grounds Maintenance, Investment, On-Site Support, Off-Site Support, and Public Affairs and Regulatory (Paidpati, 2017, p. 12, 16, 17). The study notes that nearly all of the workers within the O&M workforce are on-site (Paidpati, 2017, p. 14). Fish and wildlife scientists and environmental scientists are included within the professional category (Paidipati, 2017, p. 32). There is no mention of parks and recreation being included in any of the personnel categories or hydropower job functions.

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7. Staffing and Investment Survey Results

HOME

SECTION OVERVIEW

Black & Veatch developed an industry staffing and investment questionnaire to obtain local utility staffing information. Overall, 18 utilities participated in the survey representing 55 powerhouses.

8.1 Survey Investment Results

Analyzes survey investment results and comparison to investment benchmarking.

8.2 Survey Staffing Results

Analyzes survey staffing results and comparison to staffing benchmarking.

DASHBOARDS

Survey Investment Results

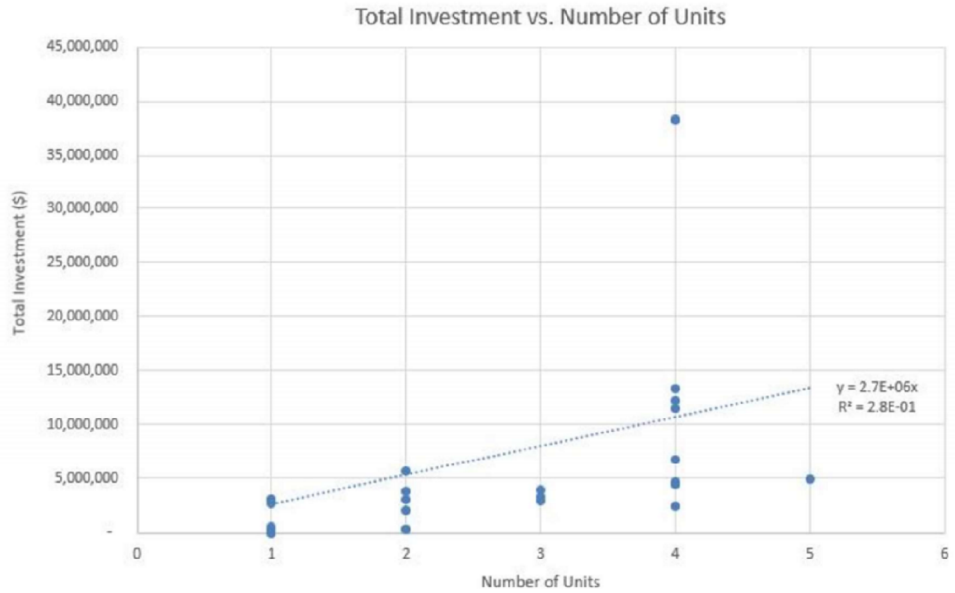
Survey Staffing Results

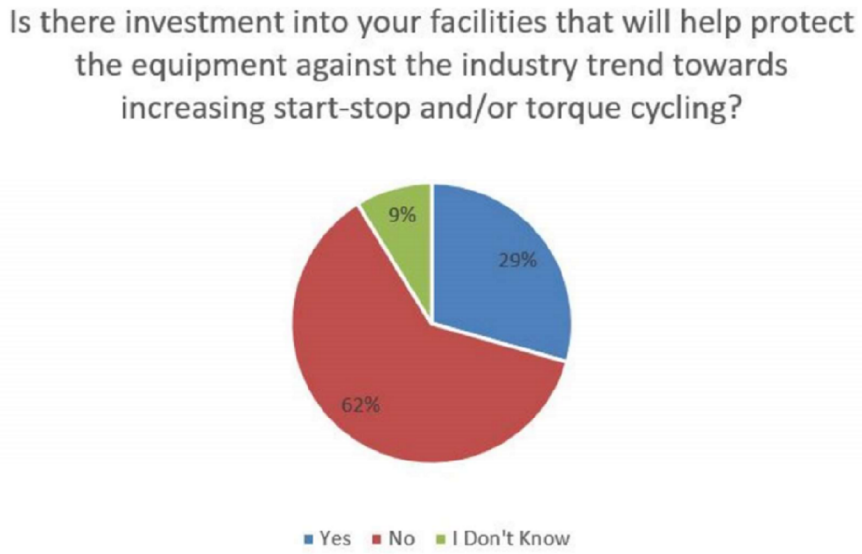
Survey Investment Results

Investment data including routine O&M, capital expenditures, and non-routine O&M was collected from each utility. These values were totaled to calculate the total investment for each powerhouse. The sample size was narrowed down to only include powerhouses with 5 or fewer units to be more comparable with LCPUD. Additionally, utilities who did not include investment data for their powerhouses were not included. This resulted in a total sample size of 34.

The total investment versus number of units is shown graphically. The expected investment level based on $/Unit is E(U)=2.7E6xU with a coefficient of determination of 28%. **Based on this function, the expected total investment for LCPUD is $5.4M annually.**

Utilities were polled on if they are investing to protect equipment against the industry trend towards increasing start-stop and/or torque cycling, shown graphically. **62% of respondents believe they are not prepared for balancing operation.**





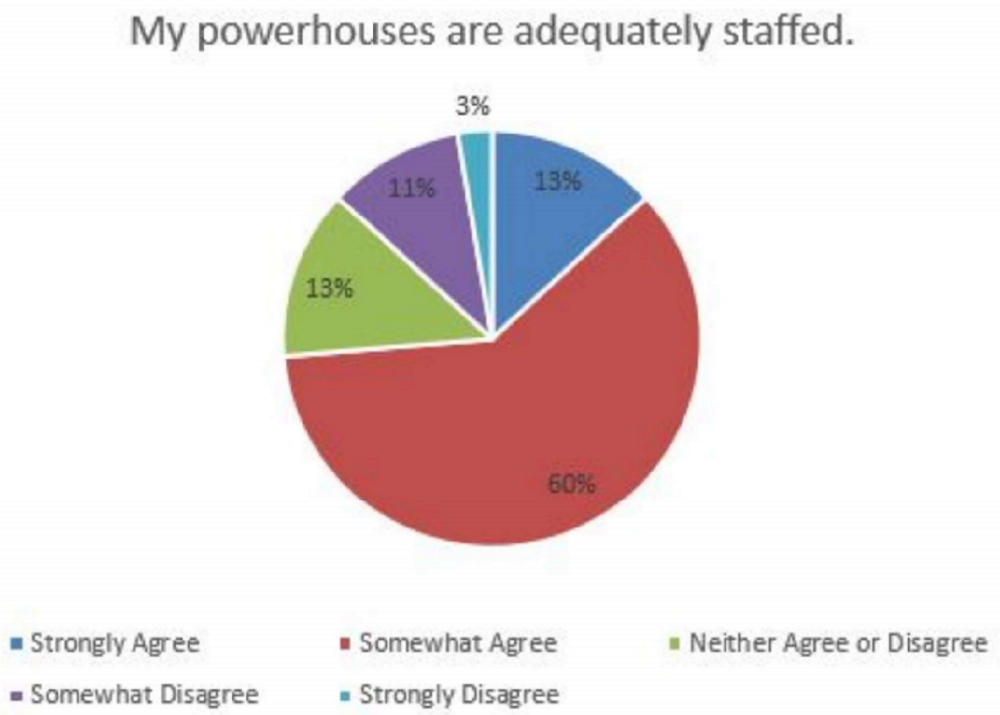
Survey Staffing Results

Full-time equivalent (FTE) personnel data was collected from each utility. To calculate the total FTE for each powerhouse, the following categories were totaled for both on-site and off-site personnel: craft personnel (operators, electricians, mechanics, pipe-fitters, etc.), parks, recreation and science professionals (biologists, park staff, water quality experts, etc.), staff (engineers, project managers, supervisors, etc.), and other staff. The sample size was narrowed down to only include powerhouses with 5 or fewer units to be more comparable with LCPUD. A couple additional tweaks were made to the data as some powerhouses are completely reliant on personnel from other sites, therefore making them outliers. This resulted in a total sample size of 38.

Due to differences in the organization of workforces from region to region, the average FTE per unit was calculated by dividing total FTE by total units and equaled 6.2 people . Additionally, the average FTE per unit was calculated excluding parks, recreation and science professionals from the total FTE count and equaled 5.8 people.

Both of the average FTE values are close, showing that it's normal to have 5.8 people per unit in technical fields and additional parks, recreation and science professionals. **As such, the expected FTE for LCPUD is 11.6 people plus any additional parks, recreation and science professionals.**

Utilities were also surveyed on if they believed their powerhouses were adequately staffed. **Most (73%) are content with their staffing level.**



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8. Qualifications and References

Black and Veatch Qualifications:
Black and Veatch has delivered this proven approach for over $10+billion of investment planning projects in the last 5 years. The following is a list of recent hydro projects related to risk analysis, budgeting, and planning (Yuba Water Agency, San Francisco Public Utilities Commission, Pacific Gas & Electric, and California Department of Water Resources)

General Sources:

HDR. (September 26, 2018). Independent Review and Analysis: Cowlitz Falls Hydroelectric Project.
McMillen Jacobs & Associates (MJA). (July 2018). Cowlitz Falls Hydroelectric Project FERC No. 2833 Condition Assessment Final.

Investment Benchmarking Sources:

Public Utility District No. 2 of Grant County, Washington. (2019). 2018 Annual Report. Retrieved from https://www.grantpud.org/templates/galaxy/images/images/Downloads/Publications/2019.05.28-Annual-Report.pdf
Public Utility District No. 1 of Lewis County. (2019). 2018 Annual Report. Retrieved from https://www.lcpud.org/wp-content/uploads/Audited-Financials2018-2017.pdf
Public Utility District No. 1 of Cowlitz County. (June 13, 2019). Financial Statements Audit Report. Retrieved fromhttps://www.cowlitzpud.org/wp-content/uploads/2018-Cowlitz-PUD-Financial-Audit-Issued.pdf
Eugene Water & Electric Board. (2019). Independent Auditor's Reports and Financial Statements. Retrieved from http://www.eweb.org/about-us/publications-and-reports
Seattle City Light. (2019). 2018 Annual Report. Retrieved from http://www.seattle.gov/light/pubs/AnnualRpt/2018/2018_AnnualRpt.pdf
Tacoma Power. (2019). 2018 Financial Report. Retrieved from https://www.mytpu.org/wp-content/uploads/PowerAnn18-Final.pdf
Chelan County Public Utility District. (2019). 2018 Annual Report. Retrieved from http://www.chelanpud.org/docs/default-source/default-document-library/ar-2018.pdf
Yuba County Water Agency. (2019). Audited Financial Statements. Retrieved from https://www.yubawater.org/ArchiveCenter/ViewFile/Item/303
Snohomish County Public Utility District No. 1. (2019). Annual Report 2018. Retrieved from https://www.snopud.com/Site/Content/Documents/finance/AR18_Web.pdf
Public Utility District No. 1 of Douglas County. (2019). Financial Statements Audit Report. Retrieved from https://douglaspud.org/Documents/SAO%20Financial%20Report%202018.pdf
Pend Orielle County Public Utility District. (2019). 2018 Annual Report. Retrieved from https://popud.org/assets/8870821f0e/2018-Annual-Report.pdf

Staffing Benchmarking Sources:

Paidipati, J. (January 2, 2017). Hydropower Workforce Development Report. United States. Doi::10.2172/1515066

Adherence to Contract Principles and Support for Risk Informed Decision Making Sources:

Electric Power Research Institute (EPRI). (March 1984). Hydropower Reliability Study [Report EM-3435].
"Federal Guidelines for Dam Safety" Prepared by the Ad Hoc Interagency Committee on Dam Safety, Federal Coordinating Council for Science Engineering and Technology, Washington, D.C., June 25, 1979. (Reprinted by US Department of Homeland Security, Federal Emergency Management Agency, April 2004)
U.S. Western Area Power Administration (WAPA), US Bureau of Reclamation (USBR), U.S. Army Corps of Engineers (USACE) and Bonneville Power Administration (BPA). (2017). Federal Replacements: Units, Service Lives, Factors [2017 Revision 1.1].
US Bureau of Reclamation (USBR). (August 2011). Dam safety Public Protection Guidelines: A Risk Framework to Support Dam Safety Decision-Making. https://www.usbr.gov/ssle/damsafety/documents/PPG201108.pdf
Centre for Energy Advancement through Technological Innovation (CEATI). (July 2013). hydroAMP Consolidated Equipment Condition Guide [Report No. T092700-0367-1].

Icons used in dashboards are from flaticon.com

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9. Appendix

HOME

Survey of Standards for Definitions:

From IEEE 95 Recommended Practice for Insulation Testing, *"Planned maintenance tests are used to assess stator winding insulation condition, identify maintenance needs, and prevent in-service failures. Information obtained from these tests can be used to take advantage of and perhaps even extend the full reliable life of the stator winding."* Thus, the standard is encouraging the use of data-driven maintenance.

System	Standard	Explicit Definitions
Cranes	ASME B30.2	No
	CMAA 70	No
	AIST Technical Report No. 6	No
Mech. BOP	ASME PTC 29 governor test code	No
	AWWA C516 butterfly valves	No
	ASME B31.1 power piping code	No
	AWWA C541 actuators for slide gates	No
	AWS D1.1 Structural Welding Code	No
Generators	ANSI/IEEE Std 4, IEEE Standard Techniques for High Voltage Testing Rotating Machines	No
	IEEE/ANSI C50.12, IEEE Standard for Salient Pole 50Hz and 60Hz Synchronous Generators and Generator/Motors for Hydraulic Turbine Applications Rated 5MVA and Above	No
	IEEE/ANSI C50.10, General Requirements for Synchronous Machines	No
	IEEE 95, Recommended Practice for Insulation Testing of Large Rotating AC Rotating Machinery with High Direct Voltage	No
	IEEE 112, Test Procedure for Polyphase Induction Motors and Generators	No
	ANSI/IEEE 115, IEEE Guide; Test Procedures for Synchronous Machines	No
	IEEE 286, Recommended Practice for Measurement of Power-Factor Tip Up of Rotating Machinery Stator Coil Insulation	No
	IEEE 1043, Recommended Practice for Voltage-Endurance Testing of Form Wound Bars and Coils	No
	IEEE 1095, Guide for Installation of Vertical Generators and Generator/Motors for Hydroelectric Applications	No
	ANSI/IEEE Std 43, IEEE Standard Recommended Practice for Testing Insulation Resistance of Electric Machinery	No
	IEEE 1434 Guide to the Measurements Partial Discharges in Rotating Machinery	No
	IEEE 1553, Trial-Use Standard for Voltage Endurance Testing of Form-Wound Coils and Bars for Hydro-generators	No
	Center for Energy Advancement through Technology Innovation (CEATI), Part II, Vertical Shaft Units with Francis Turbines or Reversible Pumps	No
	IEC Publication 60034-1, Rotating Electrical Machines	No
	IEC Publication 60034-2A, Methods for Determining Losses and Efficiency of Rotating Electrical Machinery From Tests (Excluding Machines for Traction Vehicles). Measurement of Losses by the Calorimetric Method	No
Excitation	IEEE 421.1 – 2007 (based on age might not be active right name) Standard Definition for Excitation System for Synchronous Machines	No
	IEEE 421.2 – 2014 Guide for Identification, testing, and Evaluation of the Dynamic Performance of Excitation Control Systems	No
	IEEE 421.3 – 2016 High-Potential Test Requirements for Excitation Systems for Synchronous Machines	No
	IEEE 421.4 – 2014 Guide for the Preparation of Excitation System Specification	No
	IEEE 421.5 – 2016 Recommended Practice for Excitation System Models	No
Transformers	IEEE C57.12.00 - 2015 Standard for General Requirements for liquid-immersed Distribution, Power, and Regulating Transformers.	No
	IEEE C57.12.01 – 2015 General Requirements for Dry-Type Distribution and Power Transformers.	No
	IEEE C57.12.11-2017 Standard Requirements for Liquid-Immersed Power Transformers.	No
	(withdrawn) IEEE C57.12.11 – 1980 Guide for Installation of Oil-Immersed Transformers (10MVA and larger; 69-287kV rating)	No
Hydraulic structures	US Bureau of Reclamation, Dam safety Public Protection Guidelines: A Risk Framework to Support Dam Safety Decision-Making, Aug 2011	No

Appendix – Master Plan Annual Spend – Base Case

Base Case Annual Spend Report (Prioritized Status Quo Budget and 1 PM)

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Assessment and Upgrades for refurbishment of gantry crane											
Battery bank replacement				$55							
Boat barrier replacement											
Bridge Inspection and Analysis		$103									
Campground Electrical Design for future Upgrade											
Campground Electrical Upgrade											
Campground Restroom Construction											
Campground Shelter construction											
Campground Storage Building Construction							$179				
CHAP Wildlife Evaluation									$443		
Coating and cathodic protection upgrades completion phase	$400										
Concrete dam deck and exterior repair											$20
Condition-based Operations and Maintenance planning program implementation. Operations and Maintenance system implementation that links with OEM recommendations				$219	$225	$232	$239	$246	$253	$261	$269
Cooling water Backwash controls upgrade						$23					
Dam joint movement study											$134
Day Use Park Improvements											
Day Use Park Well Addition								$49			
Deck bridge beams coating								$615			
Deck steel structures painting							$358				
Dewatering Pump System Replacement											
Downstream Boat Ramp Construction											
Downstream Fishing Area Improvements								$49			
Draft Tube Gate & Hoist Rehabilitation											
Drainage Pump System Refurbishment									$152		
Drainage Sump Oil Skimmer Addition							$36				
Drawings to CAD											
Elevator Upgrade								$307			
Emergency diesel generator replacement											
Erosion left abutment (end) repair									$32	$294	
ESA Requirements/Bi-Op Studies			$159	$164	$169	$174	$179	$184	$190	$196	$202

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Assessment and Upgrades for refurbishment of gantry crane										$135	$1,256
Battery bank replacement											
Boat barrier replacement	$138										
Bridge Inspection and Analysis											
Campground Electrical Design for future Upgrade			$88								
Campground Electrical Upgrade	$42	$385									
Campground Restroom Construction		$214									
Campground Shelter construction						$64					
Campground Storage Building Construction											
CHAP Wildlife Evaluation											
Coating and cathodic protection upgrades completion phase											
Concrete dam deck and exterior repair	$187										
Condition-based Operations and Maintenance planning program implementation. Operations and Maintenance system implementation that links with OEM recommendations	$277	$285	$294	$303	$312	$321	$331	$340	$351	$361	$372
Cooling water Backwash controls upgrade											
Dam joint movement study											
Day Use Park Improvements											
Day Use Park Well Addition											
Deck bridge beams coating											
Deck steel structures painting											
Dewatering Pump System Replacement											$167
Downstream Boat Ramp Construction	$35	$321									
Downstream Fishing Area Improvements											
Draft Tube Gate & Hoist Rehabilitation		$356									
Drainage Pump System Refurbishment											
Drainage Sump Oil Skimmer Addition											
Drawings to CAD											
Elevator Upgrade											
Emergency diesel generator replacement			$73								
Erosion left abutment (end) repair											
ESA Requirements/Bi-Op Studies	$208	$214	$220	$227	$234	$241	$248	$255	$263	$271	$279

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
Assessment and Upgrades for refurbishment of gantry crane									**$1,391**
Battery bank replacement									**$55**
Boat barrier replacement									**$138**
Bridge Inspection and Analysis									**$103**
Campground Electrical Design for future Upgrade									**$88**
Campground Electrical Upgrade									**$427**
Campground Restroom Construction									**$214**
Campground Shelter construction									**$64**
Campground Storage Building Construction									**$179**
CHAP Wildlife Evaluation				$733					**$1,176**
Coating and cathodic protection upgrades completion phase									**$400**
Concrete dam deck and exterior repair									**$207**
Condition-based Operations and Maintenance planning program implementation. Operations and Maintenance system implementation that links with OEM recommendations	$383	$395	$407	$419	$431	$444	$458	$471	**$8,899**
Cooling water Backwash controls upgrade									**$23**
Dam joint movement study									**$134**
Day Use Park Improvements								$28	**$28**
Day Use Park Well Addition									**$49**
Deck bridge beams coating									**$615**
Deck steel structures painting									**$358**
Dewatering Pump System Replacement							$206		**$373**
Downstream Boat Ramp Construction									**$356**
Downstream Fishing Area Improvements									**$49**
Draft Tube Gate & Hoist Rehabilitation									**$356**
Drainage Pump System Refurbishment									**$152**
Drainage Sump Oil Skimmer Addition									**$36**
Drawings to CAD								$106	**$106**
Elevator Upgrade									**$307**
Emergency diesel generator replacement									**$73**
Erosion left abutment (end) repair									**$326**
ESA Requirements/Bi-Op Studies	$287	$296	$305	$314	$323	$333	$343	$353	**$6,831**

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Evaluation of alternatives for paging system modfication or replacement											
Execution of recommended switchyard maintenance				$11							
FERC Campground improvements					$23	$209					
FERC Part 12 Inspections				$437	$450		$478		$507		$538
FERC Part 12 Mandated Seismic Analyses		$103	$106								
Fiber Optic Network Expansion											
Fire Detection System Upgrade					$5	$42					
Fire Water System Refurbishment			$85								
Future FERC mandated spillway gate inspections								$123			
Generator cooling water system refurbishment											
Generator frame and lower bracket anchor bolt and grout testing and replacement											
Generator hatch cover seals repalcement	$100										
Generator Rotor Refurbishment					$351						
Generator Testing & AVR Calibration	$90					$104					$121
Glenoma Substation 230-kV Equipment Refurbishment/Replacement	$250	$2,318									
Governor assessment											
Governor investigation to determine cause of bubbles in the oil							$12				
Gravel Project Roads Construction								$123			
GSU #1 protective relays replacement	$15	$139									
GSU #2 protective relays replacement			$16	$148							
HVAC Replacement Phase 1											
HVAC Replacement Phase 2									$40		
Intake Debris Management											
Intake Gate Slot Covers Recoating											
License submittal (relicensing) preparation									$752	$775	$798
Line protective relays replacement											
Main station service switchgear circuit breakers replacement											
Mobile Crane Replacement				$82							
Need of flashboards of emergency spillway assessment											
New bridge cranes over Unit 1 and Unit 2 Installation			$424								
New Fire Alarm horns (annunciator)									$32	$294	
New intake headgate slot cover redesign, supply, and installation										$65	$67
New Office/Warehouse/Shop Construction	$180	$1,669									
New water supply wells construction											

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Evaluation of alternatives for paging system modfication or replacement			$73								
Execution of recommended switchyard maintenance											
FERC Campground improvements											
FERC Part 12 Inspections											
FERC Part 12 Mandated Seismic Analyses											
Fiber Optic Network Expansion							$215	$221	$228	$235	$242
Fire Detection System Upgrade											
Fire Water System Refurbishment											
Future FERC mandated spillway gate inspections						$160					
Generator cooling water system refurbishment				$76							
Generator frame and lower bracket anchor bolt and grout testing and replacement				$76							
Generator hatch cover seals repalcement											
Generator Rotor Refurbishment											
Generator Testing & AVR Calibration					$140					$163	
Glenoma Substation 230-kV Equipment Refurbishment/Replacement											
Governor assessment							$33				
Governor investigation to determine cause of bubbles in the oil											
Gravel Project Roads Construction											
GSU #1 protective relays replacement											
GSU #2 protective relays replacement											
HVAC Replacement Phase 1							$12	$115			
HVAC Replacement Phase 2											
Intake Debris Management											
Intake Gate Slot Covers Recoating					$125						
License submittal (relicensing) preparation	$822	$847	$872	$898							
Line protective relays replacement			$22	$204							
Main station service switchgear circuit breakers replacement	$69	$642									
Mobile Crane Replacement											
Need of flashboards of emergency spillway assessment				$38							
New bridge cranes over Unit 1 and Unit 2 Installation											
New Fire Alarm horns (annunciator)											
New intake headgate slot cover redesign, supply, and installation											
New Office/Warehouse/Shop Construction											
New water supply wells construction			$73								

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
Evaluation of alternatives for paging system modfication or replacement									**$73**
Execution of recommended switchyard maintenance									**$11**
FERC Campground improvements									**$232**
FERC Part 12 Inspections									**$2,410**
FERC Part 12 Mandated Seismic Analyses									**$209**
Fiber Optic Network Expansion									**$1,141**
Fire Detection System Upgrade									**$47**
Fire Water System Refurbishment									**$85**
Future FERC mandated spillway gate inspections									**$283**
Generator cooling water system refurbishment									**$76**
Generator frame and lower bracket anchor bolt and grout testing and replacement									**$76**
Generator hatch cover seals repalcement									**$100**
Generator Rotor Refurbishment									**$351**
Generator Testing & AVR Calibration				$188					**$806**
Glenoma Substation 230-kV Equipment Refurbishment/Replacement									**$2,568**
Governor assessment									**$33**
Governor investigation to determine cause of bubbles in the oil									**$12**
Gravel Project Roads Construction									**$123**
GSU #1 protective relays replacement									**$154**
GSU #2 protective relays replacement									**$164**
HVAC Replacement Phase 1									**$127**
HVAC Replacement Phase 2									**$40**
Intake Debris Management	$575							$707	**$1,282**
Intake Gate Slot Covers Recoating									**$125**
License submittal (relicensing) preparation									**$5,764**
Line protective relays replacement									**$226**
Main station service switchgear circuit breakers replacement									**$711**
Mobile Crane Replacement									**$82**
Need of flashboards of emergency spillway assessment									**$38**
New bridge cranes over Unit 1 and Unit 2 Installation									**$424**
New Fire Alarm horns (annunciator)									**$326**
New intake headgate slot cover redesign, supply, and installation									**$132**
New Office/Warehouse/Shop Construction									**$1,849**
New water supply wells construction									**$73**

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
North Boat Launch & Docks Construction											
Operations staff formal training											
Optimal alternative to sluice gate issues design and implementation				$841	$2,600	$5,356					
Park & Campground Building Refurbishments											
Plant Restroom Upgrade		$31									
Powerhouse compressed air system replacement					$84						
Radio pager replacement and upgrade							$96				
Rafter kayaker alternate sites selection		$15		$38							
Rail extension over spillway 4 to access the sluice gates	$170	$525	$1,082								
Recreation Plan	$75										
Relicensing requirements implementation for recreation, fish & wildlife, operation											
Roads Maintenance	$30	$31	$32	$33	$34	$35	$36	$37	$38	$39	$40
Rock Scaling											
Security Improvements		$77	$53	$55	$56						
Security Improvements Plan	$85										
Sedimentation Mangement			$212								
Service water system pump's variable frequency drive (VFD) replacement			$16								
Service Water System Refurbishment											
Spillway 1 slab (apron #1) repair								$37	$342		
Spillway flap gate damage repair on actuator arm alignment											
Spillway flap gate design analysis and improvements suggestions				$16							
Spillway Gate Control System Replacement										$26	$242
Spillway gate response to seismic load assessment		$52									
Spillway Rehabilitation											
Spillway tension anchor inspection											
Staff augmentation to cover relicensing process											
Surge arresters replacement							$20				
Tailrace stabilization & Rock Removal											
Temporary Office Setup	$49	$50	$52								
Top deck curb and safety fence replacement	$100										
Top Deck Storage Addition											
Trash Rack and Rake Replacement											
Trash removal system upgrade											
Unit 1 - 230-kV Line breaker replacement											

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
North Boat Launch & Docks Construction						$10	$89				
Operations staff formal training											
Optimal alternative to sluice gate issues design and implementation											
Park & Campground Building Refurbishments		$43	$397								
Plant Restroom Upgrade											
Powerhouse compressed air system replacement											
Radio pager replacement and upgrade											
Rafter kayaker alternate sites selection											
Rail extension over spillway 4 to access the sluice gates											
Recreation Plan											
Relicensing requirements implementation for recreation, fish & wildlife, operation						$1,605	$1,653	$4,256	$4,384	$4,515	$4,651
Roads Maintenance	$42	$43	$44	$45	$47	$48	$50	$51	$53	$54	$56
Rock Scaling										$135	
Security Improvements											
Security Improvements Plan											
Sedimentation Mangement											
Service water system pump's variable frequency drive (VFD) replacement											
Service Water System Refurbishment					$93						
Spillway 1 slab (apron #1) repair											
Spillway flap gate damage repair on actuator arm alignment	$69										
Spillway flap gate design analysis and improvements suggestions											
Spillway Gate Control System Replacement											
Spillway gate response to seismic load assessment											
Spillway Rehabilitation	$221	$2,053									
Spillway tension anchor inspection									$35		
Staff augmentation to cover relicensing process			$596	$614	$633	$652	$671	$691	$712		
Surge arresters replacement											
Tailrace stabilization & Rock Removal			$294	$2,723							
Temporary Office Setup											
Top deck curb and safety fence replacement											
Top Deck Storage Addition						$48					
Trash Rack and Rake Replacement							$298	$2,758			
Trash removal system upgrade					$312	$2,888					
Unit 1 - 230-kV Line breaker replacement				$53	$491						

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
North Boat Launch & Docks Construction									**$99**
Operations staff formal training		$128	$132	$136	$140	$144	$149	$153	**$982**
Optimal alternative to sluice gate issues design and implementation									**$8,797**
Park & Campground Building Refurbishments									**$440**
Plant Restroom Upgrade									**$31**
Powerhouse compressed air system replacement									**$84**
Radio pager replacement and upgrade									**$96**
Rafter kayaker alternate sites selection									**$53**
Rail extension over spillway 4 to access the sluice gates									**$1,777**
Recreation Plan									**$75**
Relicensing requirements implementation for recreation, fish & wildlife, operation	$4,790	$4,934	$5,082	$5,234	$5,391	$5,553			**$52,048**
Roads Maintenance	$57	$59	$61	$63	$65	$67	$69	$71	**$1,430**
Rock Scaling			$152				$172		**$459**
Security Improvements									**$241**
Security Improvements Plan									**$85**
Sedimentation Mangement									**$212**
Service water system pump's variable frequency drive (VFD) replacement									**$16**
Service Water System Refurbishment									**$93**
Spillway 1 slab (apron #1) repair									**$379**
Spillway flap gate damage repair on actuator arm alignment									**$69**
Spillway flap gate design analysis and improvements suggestions									**$16**
Spillway Gate Control System Replacement									**$268**
Spillway gate response to seismic load assessment									**$52**
Spillway Rehabilitation									**$2,274**
Spillway tension anchor inspection									**$35**
Staff augmentation to cover relicensing process									**$4,569**
Surge arresters replacement									**$20**
Tailrace stabilization & Rock Removal									**$3,017**
Temporary Office Setup									**$151**
Top deck curb and safety fence replacement									**$100**
Top Deck Storage Addition									**$48**
Trash Rack and Rake Replacement									**$3,056**
Trash removal system upgrade									**$3,200**
Unit 1 - 230-kV Line breaker replacement									**$544**

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Unit 1 - Generator On-Line Monitoring Upgrade					$113						
Unit 1 excitation system replacement										$52	$484
Unit 1 exciter brush dust handling system design, procurement and installation											
Unit 1 generator protective relays replacement	$15	$139									
Unit 1 Generator rewind											
Unit 1 GSU main power transformers replacement											
Unit 1 Refurbishment and governor upgrade											
Unit 1 Turbine runner targeted refurbishment											
Unit 1 Turbine-Generator Inspection & Cleaning			$159								
Unit 2 - 230-kV Line breaker replacement											
Unit 2 - Generator On-Line Monitoring Upgrade						$116					
Unit 2 excitation system replacement											
Unit 2 exciter brush dust handling system design, procurement and installation											
Unit 2 generator protective relays replacement			$16	$148							
Unit 2 Generator rewind											
Unit 2 GSU main power transformers replacement											
Unit 2 Refurbishment and governor upgrade											
Unit 2 Turbine runner targeted refurbishment											
Unit 2 Turbine-Generator Inspection & Cleaning				$164							
Unit 3 Feasibility Study						$116					
Units 1&2 and Transmission control panels Component Replacement										$130	$134
Wildlife Land Management	$30	$31	$32	$33	$34	$35	$36	$37	$38	$39	
Total	**$1,589**	**$5,283**	**$2,444**	**$2,444**	**$4,144**	**$6,442**	**$1,669**	**$1,807**	**$2,819**	**$2,171**	**$3,049**

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Unit 1 - Generator On-Line Monitoring Upgrade											
Unit 1 excitation system replacement											
Unit 1 exciter brush dust handling system design, procurement and installation				$62							
Unit 1 generator protective relays replacement											
Unit 1 Generator rewind									$316	$2,926	
Unit 1 GSU main power transformers replacement					$218	$2,022					
Unit 1 Refurbishment and governor upgrade								$68	$631		
Unit 1 Turbine runner targeted refurbishment											
Unit 1 Turbine-Generator Inspection & Cleaning											
Unit 2 - 230-kV Line breaker replacement						$56	$521				
Unit 2 - Generator On-Line Monitoring Upgrade											
Unit 2 excitation system replacement	$55	$513									
Unit 2 exciter brush dust handling system design, procurement and installation					$64						
Unit 2 generator protective relays replacement											
Unit 2 Generator rewind											$335
Unit 2 GSU main power transformers replacement								$238	$2,209		
Unit 2 Refurbishment and governor upgrade										$72	$670
Unit 2 Turbine runner targeted refurbishment											
Unit 2 Turbine-Generator Inspection & Cleaning											
Unit 3 Feasibility Study											
Units 1&2 and Transmission control panels Component Replacement											
Wildlife Land Management											
Total	**$2,165**	**$5,916**	**$3,046**	**$5,319**	**$2,669**	**$8,115**	**$4,121**	**$8,993**	**$9,182**	**$8,867**	**$8,028**

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
Unit 1 - Generator On-Line Monitoring Upgrade									**$113**
Unit 1 excitation system replacement									**$536**
Unit 1 exciter brush dust handling system design, procurement and installation									**$62**
Unit 1 generator protective relays replacement									**$154**
Unit 1 Generator rewind									**$3,242**
Unit 1 GSU main power transformers replacement									**$2,240**
Unit 1 Refurbishment and governor upgrade									**$699**
Unit 1 Turbine runner targeted refurbishment				$1,047	$9,705				**$10,752**
Unit 1 Turbine-Generator Inspection & Cleaning									**$159**
Unit 2 - 230-kV Line breaker replacement									**$577**
Unit 2 - Generator On-Line Monitoring Upgrade									**$116**
Unit 2 excitation system replacement									**$568**
Unit 2 exciter brush dust handling system design, procurement and installation									**$64**
Unit 2 generator protective relays replacement									**$164**
Unit 2 Generator rewind	$3,104								**$3,439**
Unit 2 GSU main power transformers replacement									**$2,447**
Unit 2 Refurbishment and governor upgrade									**$742**
Unit 2 Turbine runner targeted refurbishment						$1,111	$10,296		**$11,407**
Unit 2 Turbine-Generator Inspection & Cleaning									**$164**
Unit 3 Feasibility Study									**$116**
Units 1&2 and Transmission control panels Component Replacement									**$264**
Wildlife Land Management									**$345**
Total	**$9,196**	**$5,812**	**$6,139**	**$8,134**	**$16,055**	**$7,652**	**$11,693**	**$1,889**	**$166,852**

Appendix – Master Plan Annual Spend – Case 2

Case 2 Annual Spend Report (Prioritized Increased Budget and 2 PMs)

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Assessment and Upgrades for refurbishment of gantry crane											
Battery bank replacement		$52									
Boat barrier replacement	$100										
Bridge Inspection and Analysis			$106								
Campground Electrical Design for future Upgrade			$64								
Campground Electrical Upgrade						$35	$322				
Campground Restroom Construction									$190		
Campground Shelter construction		$41									
Campground Storage Building Construction							$179				
CHAP Wildlife Evaluation									$443		
Coating and cathodic protection upgrades completion phase	$400										
Concrete dam deck and exterior repair			$16	$148							
Condition-based Operations and Maintenance planning program implementation. Operations and Maintenance system implementation that links with OEM recommendations			$212	$219	$225	$232	$239	$246	$253	$261	$269
Cooling water Backwash controls upgrade					$23						
Dam joint movement study			$106								
Day Use Park Improvements											
Day Use Park Well Addition							$48				
Deck bridge beams coating							$597				
Deck steel structures painting											
Dewatering Pump System Replacement											
Downstream Boat Ramp Construction					$28	$261					
Downstream Fishing Area Improvements					$45						
Draft Tube Gate & Hoist Rehabilitation				$273							
Drainage Pump System Refurbishment			$127								
Drainage Sump Oil Skimmer Addition			$32								
Drawings to CAD								$55	$57	$59	$60
Elevator Upgrade					$281						
Emergency diesel generator replacement			$53								
Erosion left abutment (end) repair						$29	$269				
ESA Requirements/Bi-Op Studies			$159	$164	$169	$174	$179	$184	$190	$196	$202

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Assessment and Upgrades for refurbishment of gantry crane	$104	$962									
Battery bank replacement											
Boat barrier replacement											
Bridge Inspection and Analysis											
Campground Electrical Design for future Upgrade											
Campground Electrical Upgrade											
Campground Restroom Construction											
Campground Shelter construction											
Campground Storage Building Construction											
CHAP Wildlife Evaluation											
Coating and cathodic protection upgrades completion phase											
Concrete dam deck and exterior repair											
Condition-based Operations and Maintenance planning program implementation. Operations and Maintenance system implementation that links with OEM recommendations	$277	$285	$294	$303	$312	$321	$331	$340	$351	$361	$372
Cooling water Backwash controls upgrade											
Dam joint movement study											
Day Use Park Improvements											
Day Use Park Well Addition											
Deck bridge beams coating											
Deck steel structures painting	$415										
Dewatering Pump System Replacement											
Downstream Boat Ramp Construction											
Downstream Fishing Area Improvements											
Draft Tube Gate & Hoist Rehabilitation											
Drainage Pump System Refurbishment											
Drainage Sump Oil Skimmer Addition											
Drawings to CAD	$62	$64	$44	$45	$47	$48	$50	$51	$53	$54	$56
Elevator Upgrade											
Emergency diesel generator replacement											
Erosion left abutment (end) repair											
ESA Requirements/Bi-Op Studies	$208	$214	$220	$227	$234	$241	$248	$255	$263	$271	$279

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
Assessment and Upgrades for refurbishment of gantry crane									**$1,066**
Battery bank replacement									**$52**
Boat barrier replacement									**$100**
Bridge Inspection and Analysis									**$106**
Campground Electrical Design for future Upgrade									**$64**
Campground Electrical Upgrade									**$357**
Campground Restroom Construction									**$190**
Campground Shelter construction									**$41**
Campground Storage Building Construction									**$179**
CHAP Wildlife Evaluation				$733					**$1,176**
Coating and cathodic protection upgrades completion phase									**$400**
Concrete dam deck and exterior repair									**$164**
Condition-based Operations and Maintenance planning program implementation. Operations and Maintenance system implementation that links with OEM recommendations	$383	$395	$407	$419	$431	$444	$458	$471	**$9,111**
Cooling water Backwash controls upgrade									**$23**
Dam joint movement study									**$106**
Day Use Park Improvements								$28	**$28**
Day Use Park Well Addition									**$48**
Deck bridge beams coating									**$597**
Deck steel structures painting									**$415**
Dewatering Pump System Replacement						$200			**$200**
Downstream Boat Ramp Construction									**$289**
Downstream Fishing Area Improvements									**$45**
Draft Tube Gate & Hoist Rehabilitation									**$273**
Drainage Pump System Refurbishment									**$127**
Drainage Sump Oil Skimmer Addition									**$32**
Drawings to CAD	$57	$59	$61	$63	$65	$67	$69	$71	**$1,317**
Elevator Upgrade									**$281**
Emergency diesel generator replacement									**$53**
Erosion left abutment (end) repair									**$298**
ESA Requirements/Bi-Op Studies	$287	$296	$305	$314	$323	$333	$343	$353	**$6,831**

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Evaluation of alternatives for paging system modfication or replacement		$52									
Execution of recommended switchyard maintenance					$11						
FERC Campground improvements	$20	$185									
FERC Part 12 Inspections				$437	$450		$478		$507		$538
FERC Part 12 Mandated Seismic Analyses	$100	$103									
Fiber Optic Network Expansion							$155	$160	$165	$170	$175
Fire Detection System Upgrade	$4	$37									
Fire Water System Refurbishment		$82									
Future FERC mandated spillway gate inspections								$123			
Generator cooling water system refurbishment				$55							
Generator frame and lower bracket anchor bolt and grout testing and replacement				$55							
Generator hatch cover seals repalcement	$100										
Generator Rotor Refurbishment							$373				
Generator Testing & AVR Calibration	$90					$104					$121
Glenoma Substation 230-kV Equipment Refurbishment/Replacement		$258	$2,387								
Governor assessment							$24				
Governor investigation to determine cause of bubbles in the oil				$11							
Gravel Project Roads Construction				$109							
GSU #1 protective relays replacement					$17	$157					
GSU #2 protective relays replacement							$18	$166			
HVAC Replacement Phase 1								$9	$86		
HVAC Replacement Phase 2							$38				
Intake Debris Management		$309							$380		
Intake Gate Slot Covers Recoating							$96				
License submittal (relicensing) preparation									$752	$775	$798
Line protective relays replacement	$15	$139									
Main station service switchgear circuit breakers replacement	$50	$464									
Mobile Crane Replacement					$84						
Need of flashboards of emergency spillway assessment					$28						
New bridge cranes over Unit 1 and Unit 2 Installation							$478				
New Fire Alarm horns (annunciator)		$26	$239								
New intake headgate slot cover redesign, supply, and installation					$56	$58					
New Office/Warehouse/Shop Construction				$197	$1,823						
New water supply wells construction				$55							

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Evaluation of alternatives for paging system modfication or replacement											
Execution of recommended switchyard maintenance											
FERC Campground improvements											
FERC Part 12 Inspections											
FERC Part 12 Mandated Seismic Analyses											
Fiber Optic Network Expansion											
Fire Detection System Upgrade											
Fire Water System Refurbishment											
Future FERC mandated spillway gate inspections						$160					
Generator cooling water system refurbishment											
Generator frame and lower bracket anchor bolt and grout testing and replacement											
Generator hatch cover seals repalcement											
Generator Rotor Refurbishment											
Generator Testing & AVR Calibration					$140					$163	
Glenoma Substation 230-kV Equipment Refurbishment/Replacement											
Governor assessment											
Governor investigation to determine cause of bubbles in the oil											
Gravel Project Roads Construction											
GSU #1 protective relays replacement											
GSU #2 protective relays replacement											
HVAC Replacement Phase 1											
HVAC Replacement Phase 2											
Intake Debris Management					$467						
Intake Gate Slot Covers Recoating											
License submittal (relicensing) preparation	$822	$847	$872	$898							
Line protective relays replacement											
Main station service switchgear circuit breakers replacement											
Mobile Crane Replacement											
Need of flashboards of emergency spillway assessment											
New bridge cranes over Unit 1 and Unit 2 Installation											
New Fire Alarm horns (annunciator)											
New intake headgate slot cover redesign, supply, and installation											
New Office/Warehouse/Shop Construction											
New water supply wells construction											

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
Evaluation of alternatives for paging system modfication or replacement									**$52**
Execution of recommended switchyard maintenance									**$11**
FERC Campground improvements									**$205**
FERC Part 12 Inspections									**$2,410**
FERC Part 12 Mandated Seismic Analyses									**$203**
Fiber Optic Network Expansion									**$825**
Fire Detection System Upgrade									**$41**
Fire Water System Refurbishment									**$82**
Future FERC mandated spillway gate inspections									**$283**
Generator cooling water system refurbishment									**$55**
Generator frame and lower bracket anchor bolt and grout testing and replacement									**$55**
Generator hatch cover seals repalcement									**$100**
Generator Rotor Refurbishment									**$373**
Generator Testing & AVR Calibration				$188					**$806**
Glenoma Substation 230-kV Equipment Refurbishment/Replacement									**$2,645**
Governor assessment									**$24**
Governor investigation to determine cause of bubbles in the oil									**$11**
Gravel Project Roads Construction									**$109**
GSU #1 protective relays replacement									**$174**
GSU #2 protective relays replacement									**$184**
HVAC Replacement Phase 1									**$95**
HVAC Replacement Phase 2									**$38**
Intake Debris Management	$575							$707	**$2,438**
Intake Gate Slot Covers Recoating									**$96**
License submittal (relicensing) preparation									**$5,764**
Line protective relays replacement									**$154**
Main station service switchgear circuit breakers replacement									**$514**
Mobile Crane Replacement									**$84**
Need of flashboards of emergency spillway assessment									**$28**
New bridge cranes over Unit 1 and Unit 2 Installation									**$478**
New Fire Alarm horns (annunciator)									**$265**
New intake headgate slot cover redesign, supply, and installation									**$114**
New Office/Warehouse/Shop Construction									**$2,020**
New water supply wells construction									**$55**

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
North Boat Launch & Docks Construction			$6	$59							
Operations staff formal training							$78	$80	$82	$85	$87
Optimal alternative to sluice gate issues design and implementation				$841	$2,600	$5,356					
Park & Campground Building Refurbishments								$37	$342		
Plant Restroom Upgrade					$34						
Powerhouse compressed air system replacement			$80								
Radio pager replacement and upgrade	$80										
Rafter kayaker alternate sites selection		$15		$38							
Rail extension over spillway 4 to access the sluice gates	$170	$525	$1,082								
Recreation Plan	$75										
Relicensing requirements implementation for recreation, fish & wildlife, operation											
Roads Maintenance	$30	$31	$32	$33	$34	$35	$36	$37	$38	$39	$40
Rock Scaling					$84				$95		
Security Improvements		$77	$53	$55	$56						
Security Improvements Plan	$85										
Sedimentation Mangement	$200										
Service water system pump's variable frequency drive (VFD) replacement				$16							
Service Water System Refurbishment								$74			
Spillway 1 slab (apron #1) repair				$33	$304						
Spillway flap gate damage repair on actuator arm alignment			$53								
Spillway flap gate design analysis and improvements suggestions		$15									
Spillway Gate Control System Replacement						$23	$215				
Spillway gate response to seismic load assessment		$52									
Spillway Rehabilitation			$170	$1,574							
Spillway tension anchor inspection											
Staff augmentation to cover relicensing process											$546
Surge arresters replacement				$19							
Tailrace stabilization & Rock Removal											
Temporary Office Setup	$49	$50	$52								
Top deck curb and safety fence replacement	$100										
Top Deck Storage Addition					$34						
Trash Rack and Rake Replacement			$191	$1,770							
Trash removal system upgrade											
Unit 1 - 230-kV Line breaker replacement								$43	$399		

Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
North Boat Launch & Docks Construction											
Operations staff formal training	$90	$93	$95	$98	$101	$104	$107	$111	$114	$117	$121
Optimal alternative to sluice gate issues design and implementation											
Park & Campground Building Refurbishments											
Plant Restroom Upgrade											
Powerhouse compressed air system replacement											
Radio pager replacement and upgrade											
Rafter kayaker alternate sites selection											
Rail extension over spillway 4 to access the sluice gates											
Recreation Plan											
Relicensing requirements implementation for recreation, fish & wildlife, operation						$1,605	$1,653	$4,256	$4,384	$4,515	$4,651
Roads Maintenance	$42	$43	$44	$45	$47	$48	$50	$51	$53	$54	$56
Rock Scaling		$107				$120				$135	
Security Improvements											
Security Improvements Plan											
Sedimentation Mangement											
Service water system pump's variable frequency drive (VFD) replacement											
Service Water System Refurbishment											
Spillway 1 slab (apron #1) repair											
Spillway flap gate damage repair on actuator arm alignment											
Spillway flap gate design analysis and improvements suggestions											
Spillway Gate Control System Replacement											
Spillway gate response to seismic load assessment											
Spillway Rehabilitation											
Spillway tension anchor inspection		$29									
Staff augmentation to cover relicensing process	$562	$579	$596	$614	$633	$652					
Surge arresters replacement											
Tailrace stabilization & Rock Removal		$285	$2,643								
Temporary Office Setup											
Top deck curb and safety fence replacement											
Top Deck Storage Addition											
Trash Rack and Rake Replacement											
Trash removal system upgrade			$294	$2,723							
Unit 1 - 230-kV Line breaker replacement											

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
North Boat Launch & Docks Construction									**$65**
Operations staff formal training	$125	$128	$132	$136	$140	$144	$149	$153	**$2,670**
Optimal alternative to sluice gate issues design and implementation									**$8,797**
Park & Campground Building Refurbishments									**$379**
Plant Restroom Upgrade									**$34**
Powerhouse compressed air system replacement									**$80**
Radio pager replacement and upgrade									**$80**
Rafter kayaker alternate sites selection									**$53**
Rail extension over spillway 4 to access the sluice gates									**$1,777**
Recreation Plan									**$75**
Relicensing requirements implementation for recreation, fish & wildlife, operation	$4,790	$4,934	$5,082	$5,234	$5,391	$5,553			**$52,048**
Roads Maintenance	$57	$59	$61	$63	$65	$67	$69	$71	**$1,430**
Rock Scaling			$152				$172		**$865**
Security Improvements									**$241**
Security Improvements Plan									**$85**
Sedimentation Mangement									**$200**
Service water system pump's variable frequency drive (VFD) replacement									**$16**
Service Water System Refurbishment									**$74**
Spillway 1 slab (apron #1) repair									**$337**
Spillway flap gate damage repair on actuator arm alignment									**$53**
Spillway flap gate design analysis and improvements suggestions									**$15**
Spillway Gate Control System Replacement									**$238**
Spillway gate response to seismic load assessment									**$52**
Spillway Rehabilitation									**$1,744**
Spillway tension anchor inspection									**$29**
Staff augmentation to cover relicensing process									**$4,182**
Surge arresters replacement									**$19**
Tailrace stabilization & Rock Removal									**$2,928**
Temporary Office Setup									**$151**
Top deck curb and safety fence replacement									**$100**
Top Deck Storage Addition									**$34**
Trash Rack and Rake Replacement									**$1,961**
Trash removal system upgrade									**$3,017**
Unit 1 - 230-kV Line breaker replacement									**$442**

Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Unit 1 - Generator On-Line Monitoring Upgrade							$119				
Unit 1 excitation system replacement								$49	$456		
Unit 1 exciter brush dust handling system design, procurement and installation			$43								
Unit 1 generator protective relays replacement					$17	$157					
Unit 1 Generator rewind											$242
Unit 1 GSU main power transformers replacement	$140	$1,298									
Unit 1 Refurbishment and governor upgrade								$49	$456		
Unit 1 Turbine runner targeted refurbishment							$597	$5,534			
Unit 1 Turbine-Generator Inspection & Cleaning											$202
Unit 2 - 230-kV Line breaker replacement										$46	$423
Unit 2 - Generator On-Line Monitoring Upgrade								$123			
Unit 2 excitation system replacement										$52	$484
Unit 2 exciter brush dust handling system design, procurement and installation				$45							
Unit 2 generator protective relays replacement							$18	$166			
Unit 2 Generator rewind											
Unit 2 GSU main power transformers replacement	$140	$1,298									
Unit 2 Refurbishment and governor upgrade										$52	$484
Unit 2 Turbine runner targeted refurbishment									$633	$5,871	
Unit 2 Turbine-Generator Inspection & Cleaning											
Unit 3 Feasibility Study	$100										
Units 1&2 and Transmission control panels Component Replacement					$113	$116					
Wildlife Land Management	$30	$31	$32	$33	$34	$35	$36	$37	$38	$39	
Total	**$2,078**	**$5,140**	**$5,295**	**$6,239**	**$6,550**	**$6,772**	**$4,592**	**$7,172**	**$5,562**	**$7,645**	**$4,671**

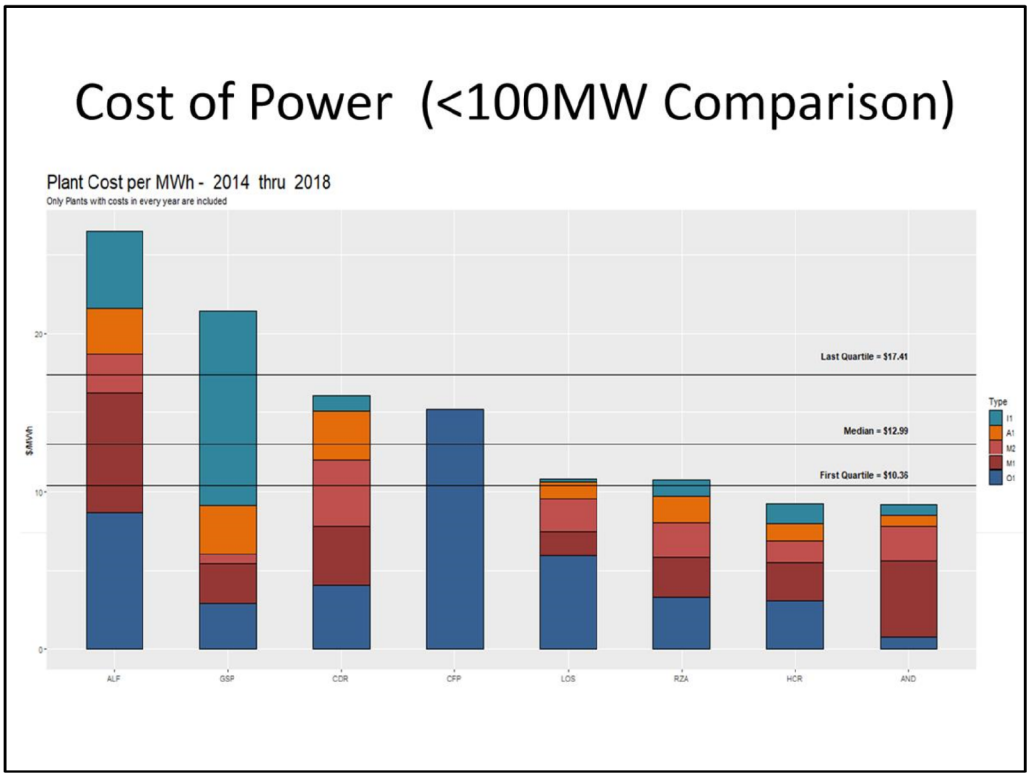
Project	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Unit 1 - Generator On-Line Monitoring Upgrade											
Unit 1 excitation system replacement											
Unit 1 exciter brush dust handling system design, procurement and installation											
Unit 1 generator protective relays replacement											
Unit 1 Generator rewind	$2,242										
Unit 1 GSU main power transformers replacement											
Unit 1 Refurbishment and governor upgrade											
Unit 1 Turbine runner targeted refurbishment											
Unit 1 Turbine-Generator Inspection & Cleaning											
Unit 2 - 230-kV Line breaker replacement											
Unit 2 - Generator On-Line Monitoring Upgrade											
Unit 2 excitation system replacement											
Unit 2 exciter brush dust handling system design, procurement and installation											
Unit 2 generator protective relays replacement											
Unit 2 Generator rewind		$257	$2,379								
Unit 2 GSU main power transformers replacement											
Unit 2 Refurbishment and governor upgrade											
Unit 2 Turbine runner targeted refurbishment											
Unit 2 Turbine-Generator Inspection & Cleaning	$208										
Unit 3 Feasibility Study											
Units 1&2 and Transmission control panels Component Replacement											
Wildlife Land Management											
Total	**$5,032**	**$3,765**	**$7,481**	**$4,953**	**$1,981**	**$3,299**	**$2,439**	**$5,064**	**$5,218**	**$5,670**	**$5,535**

Project	2043	2044	2045	2046	2047	2048	2049	2050	Total
Unit 1 - Generator On-Line Monitoring Upgrade									$119
Unit 1 excitation system replacement									$505
Unit 1 exciter brush dust handling system design, procurement and installation									$43
Unit 1 generator protective relays replacement									$174
Unit 1 Generator rewind									$2,484
Unit 1 GSU main power transformers replacement									$1,438
Unit 1 Refurbishment and governor upgrade									$505
Unit 1 Turbine runner targeted refurbishment									$6,131
Unit 1 Turbine-Generator Inspection & Cleaning									$202
Unit 2 - 230-kV Line breaker replacement									$469
Unit 2 - Generator On-Line Monitoring Upgrade									$123
Unit 2 excitation system replacement									$536
Unit 2 exciter brush dust handling system design, procurement and installation									$45
Unit 2 generator protective relays replacement									$184
Unit 2 Generator rewind									$2,636
Unit 2 GSU main power transformers replacement									$1,438
Unit 2 Refurbishment and governor upgrade									$536
Unit 2 Turbine runner targeted refurbishment									$6,504
Unit 2 Turbine-Generator Inspection & Cleaning									$208
Unit 3 Feasibility Study									$100
Units 1&2 and Transmission control panels Component Replacement									$229
Wildlife Land Management									$345
Total	**$6,274**	**$5,871**	**$6,200**	**$7,150**	**$6,415**	**$6,808**	**$1,260**	**$1,854**	**$153,985**

Cowlitz Falls Project

- PPA signed May 1991. BPA receives 100% of the power generated by the Cowlitz Falls Project. In return, BPA pays all costs associated with the operation of the Project. PPA termination date is June 30, 2032.
- Lewis County PUD's Cowlitz Falls Project (CFP) began commercial operation in June 1994 (relicense 2036).
- The Cowlitz Falls Dam is a run of the river operation. It has two 35MW Kaplan turbines which produce about 223,000 MWH/annually.
- In association with the PPA and the CFP, BPA also has a transmission agreement which expires at the same time as the PPA. The current yearly payment is $628,602.

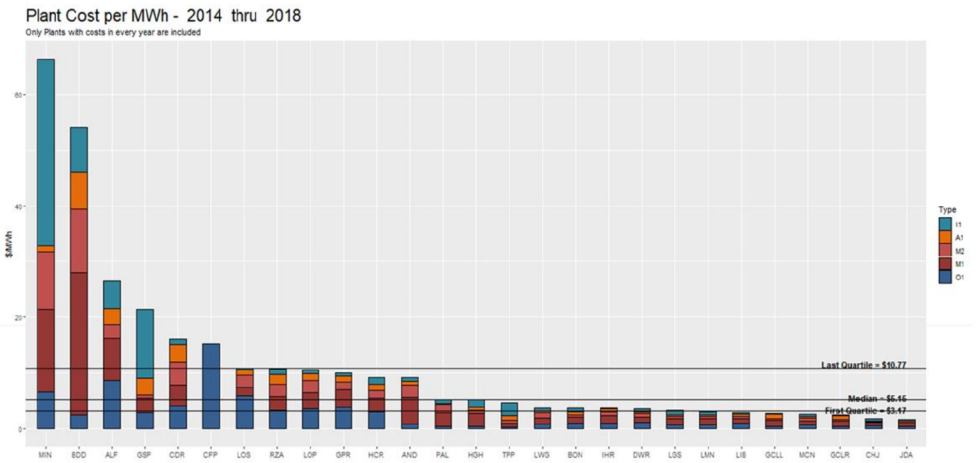
Cost of Power (<100MW Comparison)



Cowlitz Falls O&M costs are compared on a 5-year average dollars-per-megawatt ($/MWh) basis with similarly sized FCRPS plants (<100MW). Average cost of power for 2014-2018 is ~ $15/MWhr

- Plant Operations (O1 – blue) includes facility operations (Units, Gates, Intake, Switchgear, etc.)
- Maintenance (M1 – red) includes all facility maintenance inside the powerhouse or directly supporting power generation
- Maintenance (M2 – light red) includes all facility maintenance outside of the powerhouse or maintenance that does not directly support power generation (including roadways, grounds, , janitorial, parking, etc.)
- Plant Administration (A1 – orange) includes General Clerical; Onsite HR, IT, Telecom, Security, and more
- Non-routine Maintenance (I1 – teal) includes non-recurring expense items such as rewinds, re-wedge, cavitation repairs, and any major overhaul/refurbishment work that is not capitalized. This is not limited to generators, can include transformers or other civil structures as well.

Cost of Power – All Plant Comparison



Explanation for the cost categories:

- Plant Operations (O1 – blue) includes facility operations (Units, Gates, Intake, Switchgear, etc.)
- Maintenance (M1 – red) includes all facility maintenance inside the powerhouse or directly supporting power generation
- Maintenance (M2 – light red) includes all facility maintenance outside of the powerhouse or maintenance that does not directly support power generation (including roadways, grounds, , janitorial, parking, etc.)
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From: Sonoda,Cherie D (BPA) - PGAC-RICHLAND
Sent: Wed May 19 15:21:32 2021
To: Todd,Wayne A (BPA) - PGA-6; Smith,Glen A (BPA) - PG-5
Subject: RE: Cowlitz Cost of Power
Importance: Normal
Attachments: FW: Seven Year Outlook for Cowlitz Falls Project; image001.png; image002.png

Microsoft Exchange Server;converted from html;
Attached is the projections CFP sent us last November. This is the most current information we have; however, we are getting indications as we work through FY22 that CFP plans to increase these numbers.

Project Reimbursement / Revenue
FY21: $ (8,169,800)
FY22: $ (12,779,750)
FY23: $ (12,819,300)

FY24:$ (12,703,300)

From: Todd,Wayne A (BPA) - PGA-6 <watodd@bpa.gov>
Sent: Wednesday, May 19, 2021 1:56 PM
To: Smith,Glen A (BPA) - PG-5 <gasmith@bpa.gov>
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>
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Subject: RE: Cowlitz Cost of Power
I don't think so, but Cherie can you confirm?
From: Smith,Glen A (BPA) - PG-5 < gasmith@bpa.gov>
Sent: Wednesday, May 19, 2021 1:50 PM
To: Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND < csonoda@bpa.gov>
Subject: RE: Cowlitz Cost of Power
And, is there a document that shows the cost projections for Cowlitz?
Thanks
From: Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>
Sent: Wednesday, May 19, 2021 1:42 PM
To: Smith,Glen A (BPA) - PG-5 < gasmith@bpa.gov>
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND < csonoda@bpa.gov>
Subject: Cowlitz Cost of Power
Glen - This came up in a discussion about cost of power at CGS, but I found the COP numbers for Cowlitz Falls interesting as I think benchmarking type numbers Drew or Gordon had worked up a year or so ago were much lower; my recollection was in the $20-30/MWh range. These numbers in the mid-forties are based on budgets no greater than $5M a year, so I can only imagine how expensive CFP will be with budgets in the $10M range.
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Thanks,
Wayne
From: Ashby,Gordon S (BPA) - PGA-6 < gsashby@bpa.gov>
Sent: Wednesday, May 19, 2021 7:15 AM
To: Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov>; Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>
Subject: RE: [EXTERNAL] Re: Cost Graphics - BPA
Hi Daniel,
Here is the table that finance produces. The cost of generation for CGS averaged $49.38/MWh and the fully loaded cost (with BPA overheads) averaged $57.00/MWh. At this point we don't have approval from the Corps and Reclamation to release the individual plant numbers, so consider this background information and just forward on the CGS numbers.
Gordon
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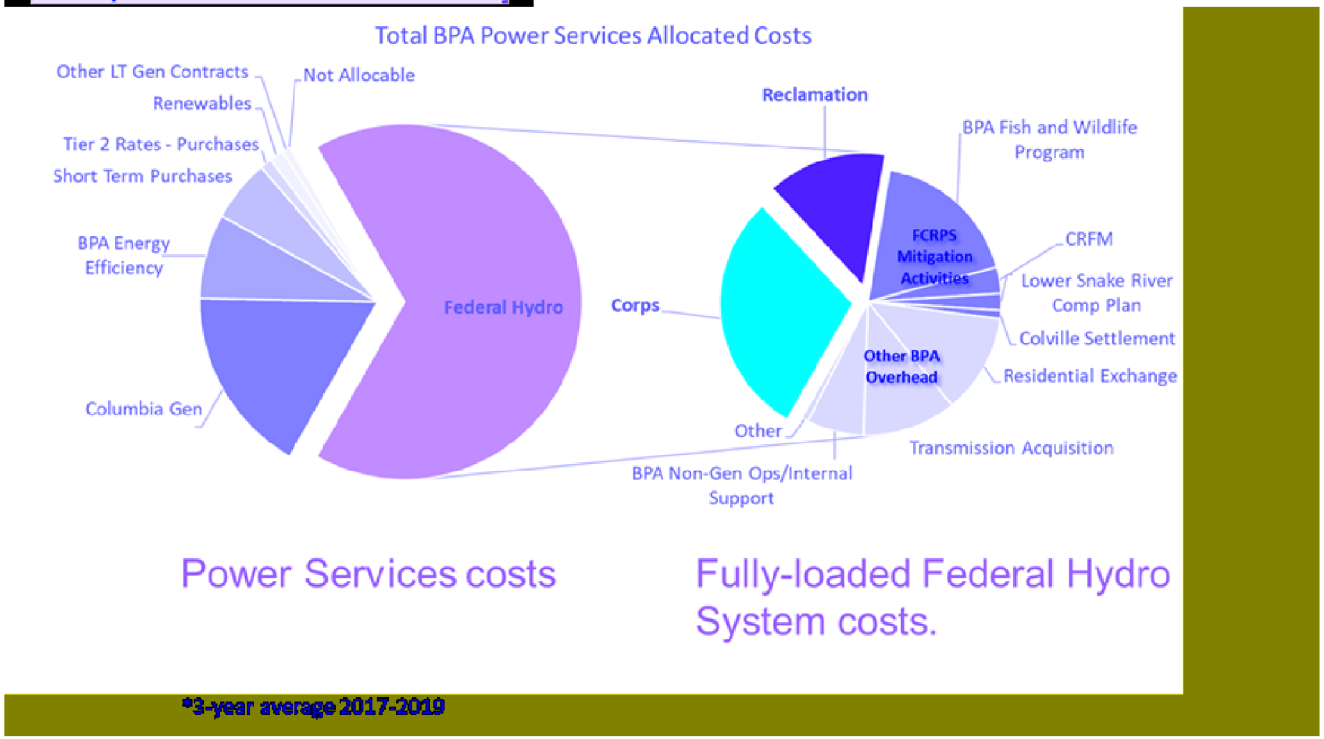
Sent: Wednesday, May 19, 2021 7:00 AM
To: Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>; Ashby,Gordon S (BPA) - PGA-6 < gsashby@bpa.gov>
Subject: FW: [EXTERNAL] Re: Cost Graphics - BPA
Do we have CGS in $/MWh?

Daniel
From: John Saven (b)(6)
Sent: Tuesday, May 18, 2021 4:14 PM
To: Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov>
Subject: [EXTERNAL] Re: Cost Graphics - BPA
Thanks Daniel. Good to hear from you. I hope all is well. These materials are helpful. I am going to participate as a Board member in arbitration for Energy Northwest with the IBEW and want to make the case that ENW is very constrained in what we can do regarding salaries. In simple terms I would like to show that the average cost of energy that ENW produces compared to the average cost of FCRPS resources is much higher. Given that dynamic, and the business relationship between BPA and ENW, particularly with 2028 contracts coming up and BPA with excess resources, we can't just open the piggy bank. If you have anything that links volume of power supply and cost between CGS and FCRPS that would be very helpful. If not I can work with this. Best regards. John
On Tue, May 18, 2021 at 2:34 PM Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov> wrote:
> Hi John, long time no see. Hope all is well with you.
> I hear you are looking for cost information. I've included two graphics that may help, but you may be after something different.
> Helpful?
> Daniel

Table 8.3.6-1 – 3-year Average Cost of Power Metrics (FY17-FY19)

Resource	Cost of Generation ($/MWh)	Fully Loaded Cost $/MWh
Main Stem Columbia	7.52	18.19
Lower Snake	9.86	26.85
Headwater	12.49	23.06
Area Support	23.41	40.08
Local Support	29.56	40.11
FCRPS Hydro	8.89	20.51



*3-year average 2017-2019

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Sent: Thu May 20 07:35:22 2021
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Subject: RE: Cowlitz Cost of Power
Importance: Normal
Attachments: SOB; image001.png; image002.png; RE: Cost of Power for CFP; CFP Cost per KWH.xlsx

Microsoft Exchange Server;converted from html;
Attached are budgets going back to FY15. Last 3 years highlighted below.
Please note that the CFP Cost per KWH spreadsheet only includes O&M.
FY18: $4.3M
FY19: $4.2M
FY20: $5M
Best,
Cherie
From: Smith,Glen A (BPA) - PG-5 <gasmith@bpa.gov>
Sent: Thursday, May 20, 2021 6:43 AM
To: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>; Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>
Subject: RE: Cowlitz Cost of Power
Thanks Cherie. Can you point me to where we have past budgets or charges from Lewis County?
Glen
From: Sonoda,Cherie D (BPA) - PGAC-RICHLAND < csonoda@bpa.gov>
Sent: Wednesday, May 19, 2021 3:22 PM
To: Todd,Wayne A (BPA) - PGA-6 < watodd@bpa.gov>; Smith,Glen A (BPA) - PG-5 < gasmith@bpa.gov >
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Sent: Wednesday, May 19, 2021 1:50 PM

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Thanks Daniel. Good to hear from you. I hope all is well. These materials are helpful. I am going to participate as a Board member in arbitration for Energy Northwest with the IBEW and want to make the case that ENW is very constrained in what we can do regarding salaries. In simple terms I would

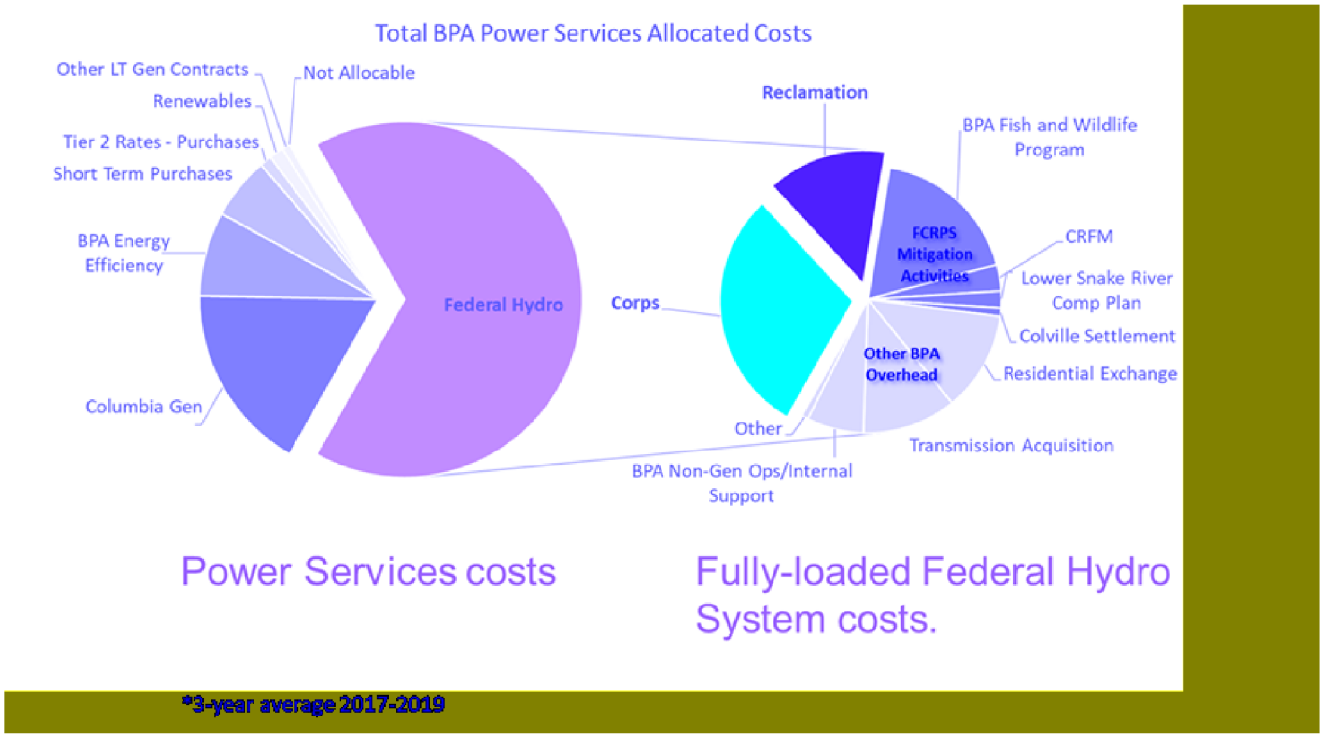
like to show that the average cost of energy that ENW produces compared to the average cost of FCRPS resources is much higher. Given that dynamic, and the business relationship between BPA and ENW, particularly with 2028 contracts coming up and BPA with excess resources, we can't just open the piggy bank. If you have anything that links volume of power supply and cost between CGS and FCRPS that would be very helpful. If not I can work with this. Best regards. John

On Tue, May 18, 2021 at 2:34 PM Fisher,Daniel H (BPA) - PSR-6 < dhfisher@bpa.gov> wrote:

> Hi John, long time no see. Hope all is well with you.
>
> I hear you are looking for cost information. I've included two graphics that may help, but you may be after something different.
>
> Helpful?
>
> Daniel

Table 8.3.6-1 – 3-year Average Cost of Power Metrics (FY17-FY19)

Resource	Cost of Generation ($/MWh)	Fully Loaded Cost $/MWh
Main Stem Columbia	7.52	18.19
Lower Snake	9.86	26.85
Headwater	12.49	23.06
Area Support	23.41	40.08
Local Support	29.56	40.11
FCRPS Hydro	**8.89**	**20.51**


Total BPA Power Services Allocated Costs
Other LT Gen Contracts
Not Allocable
Renewables
Tier 2 Rates - Purchases
Short Term Purchases
BPA Energy Efficiency
Columbia Gen
Federal Hydro
Power Services costs
Reclamation
BPA Fish and Wildlife Program
FCRPS Mitigation Activities
CRFM
Lower Snake River Comp Plan
Colville Settlement
Residential Exchange
Transmission Acquisition
Other BPA Overhead
Other
BPA Non-Gen Ops/Internal Support
Corps
Fully-loaded Federal Hydro System costs.
*3-year average 2017-2019

From: Carlson,Debbie (BPA) - PGAC-RICHLAND

Sent: Tue Feb 23 15:52:03 2021

To: Sonoda,Cherie D (BPA) - PGAC-RICHLAND

Subject: FW: Seven Year Outlook for Cowlitz Falls Project

Importance: Normal

Attachments: 2021 CFP 7 Year Outlook - Summary.pdf; 2021 CFP 7 Year Outlook - Detail.pdf

As the FY 2022 budget discussions start – thought having Lewis' projections from last year might be of some use.

From: Stacy Davis <Stacy@lcpud.org>
Sent: Wednesday, November 18, 2020 5:03 PM
To: Connolly,Kieran P (BPA) - PG-5 <kpconnolly@bpa.gov>
Cc: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>; Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>; Chris Roden <chrisr@lcpud.org>; Wendy Woody <wendyw@lcpud.org>; Matt Samuelson <matts@lcpud.org>; Joe First <joef@lcpud.org>; Brad Ford <bradf@lcpud.org>; Doug Streeter CPA <dougst@lcpud.org>; Todd,Wayne A (BPA) - PGA-6 <watodd@bpa.gov>
Subject: [EXTERNAL] Seven Year Outlook for Cowlitz Falls Project

Good Afternoon,

Please find attached the Cowlitz Falls Project seven (7) year outlook summary and outlook summary covering the

years 2021 through 2027.

Sincerely,

Stacy Davis
Executive Assistant | Lewis County PUD | www.lcpud.org
o:(360) 748-9261 | d:(360) 740-2412 | e:Stacy@lcpud.org
321 NW Pacific Ave | PO Box 330 | Chehalis, WA 98532-0330

From: Carlson,Debbie (BPA) - PGAC-RICHLAND

Sent: Fri Sep 18 12:51:16 2020

To: Sonoda,Cherie D (BPA) - PGAC-RICHLAND

Subject: SOB

Importance: Normal

Attachments: Final FY 2015.pdf; Final FY 2016.pdf; Final FY 2017.pdf; Final FY 2018.pdf; [EXTERNAL] RE: **EXTERNAL EMAIL** Status of the Budget - FY 2019

Cowlitz Falls Project 7 Year Outlook Summary							
	2021	2022	2023	2024	2025	2026	2027
O&M	$ 2,527,900	$ 2,825,550	$ 1,825,700	$ 1,514,700	$ 1,812,600	$ 2,051,500	$ 1,846,500
A&G	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900
Electric Plant - Generation	$ 457,400	$ 228,400	$ 44,400	$ 44,400	$ 99,400	$ 254,400	$ 89,400
Fish & Wildlife	$ 103,900	$ 188,700	$ 90,700	$ 93,200	$ 115,200	$ 269,200	$ 274,200
Insurance	$ 202,000	$ 206,250	$ 210,500	$ 214,800	$ 219,000	$ 219,000	$ 219,000
License Compliance	$ 123,100	$ 136,600	$ 137,600	$ 138,600	$ 139,600	$ 139,600	$ 139,600
Misc Expenses	$ 203,500	$ 166,900	$ 175,300	$ 175,700	$ 175,800	$ 169,700	$ 169,700
Misc Hydraulic Plant	$ 289,800	$ 320,000	$ 313,000	$ 143,000	$ 186,000	$ 146,000	$ 231,000
Office Supplies and Expenses							
Professional Services	$ 20,900	$ 21,300	$ 21,800	$ 22,200	$ 22,700	$ 22,700	$ 22,700
Recreation	$ 293,800	$ 842,500	$ 368,500	$ 210,200	$ 364,800	$ 340,800	$ 210,800
Resv., Dams & Waterways	$ 647,500	$ 498,900	$ 286,900	$ 296,400	$ 313,900	$ 313,900	$ 313,900
Structures	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300
Supervision & Engineering	$ 13,600	$ 13,600	$ 14,600	$ 13,800	$ 13,800	$ 13,800	$ 13,800
Supplies & Expenses	$ 22,100	$ 22,100	$ 22,100	$ 22,100	$ 22,100	$ 22,100	$ 22,100
Tacoma Related Expenses							
Taxes - County	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700
Taxes - Ecology	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500
Taxes - Privilege	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900
Transmission Maintenance	$ 70,000	$ 100,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
OR&R	$ 1,425,400	$ 5,065,400	$ 5,959,400	$ 6,024,400	$ 1,303,400	$ 1,935,000	$ 1,547,000
Electric Plant - Generation	$ 620,000	$ 144,000		$ 433,000	$ 503,000		$ 220,000
Fish & Wildlife	$ 50,000	$ 80,000	$ 85,000		$ 400,000		
Misc Expenses	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400		
Misc Hydraulic Plant	$ 225,000	$ 1,903,000				$ 50,000	$ 188,000
Recreation			$ 150,000				$ 501,000
Resv., Dams & Waterways	$ 525,000	$ 2,871,000	$ 5,647,000	$ 5,556,000	$ 325,000	$ 1,847,000	$ 600,000
Transportation Equipment		$ 62,000	$ 72,000	$ 30,000	$ 70,000	$ 38,000	$ 38,000
REV	$ (8,915,800)	$ (13,547,750)	$ (13,610,300)	$ (13,518,300)	$ (9,244,300)	$ (10,193,200)	$ (9,426,900)
Project Reimbursement / Revenue	$ (8,169,800)	$ (12,779,750)	$ (12,819,300)	$ (12,703,300)	$ (8,405,300)	$ (9,354,200)	$ (8,587,900)
Transmission Wheeling	$ (746,000)	$ (768,000)	$ (791,000)	$ (815,000)	$ (839,000)	$ (839,000)	$ (839,000)
Special O&M	$ 4,216,500	$ 4,888,800	$ 5,034,200	$ 5,164,200	$ 5,289,300	$ 5,367,700	$ 5,194,400
A&G	$ 552,100	$ 597,300	$ 619,400	$ 637,400	$ 656,100	$ 656,100	$ 656,100
Debt - 2021 CFP Intercompany Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Health, Welfare, Safety	$ 16,000	$ 16,000	$ 11,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000
Labor - CFP - Cobra	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Labor - CFP - Flu Shots	$ 400	$ 400	$ 400	$ 400	$ 400	$ 400	$ 400
Labor - CFP - L&I	$ 16,200	$ 28,100	$ 30,800	$ 31,700	$ 32,700	$ 32,700	$ 32,700
Labor - CFP - Long Term Disability	$ 3,200	$ 4,200	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500
Labor - CFP - Medical Insurance	$ 411,400	$ 486,900	$ 501,500	$ 510,000	$ 520,000	$ 520,000	$ 520,000
Labor - CFP - Misc Pension & Benefits	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Labor - CFP - OT	$ 63,000	$ 66,400	$ 68,900	$ 71,100	$ 73,200	$ 73,200	$ 73,200
Labor - CFP - Paid Family Leave	$ 2,100	$ 3,000	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400
Labor - CFP - PCORI	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
Labor - CFP - PERS	$ 131,400	$ 171,500	$ 177,600	$ 180,000	$ 185,000	$ 185,000	$ 185,000
Labor - CFP - PL Cash Out	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Labor - CFP - Social Security Medicare	$ 100,400	$ 129,000	$ 133,500	$ 137,500	$ 141,600	$ 141,600	$ 141,600
Labor - CFP - Standby	$ 37,100	$ 38,300	$ 39,500	$ 40,700	$ 42,000	$ 42,000	$ 42,000
Labor - CFP - STD	$ 2,000	$ 2,000	$ 2,000	$ 2,100	$ 2,200	$ 2,200	$ 2,200
Labor - CFP - Term Insurance	$ 1,400	$ 1,600	$ 1,600	$ 1,700	$ 1,700	$ 1,700	$ 1,700
Labor - CFP - VEBA	$ 12,200	$ 16,000	$ 16,500	$ 17,000	$ 17,500	$ 17,500	$ 17,500
Labor - CFP - VEBA Cash out	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Labor - CFP - Wages	$ 1,312,500	$ 1,686,700	$ 1,745,000	$ 1,797,400	$ 1,851,300	$ 1,906,800	$ 1,964,000
Labor - ES Support	$ 1,067,100	$ 1,178,100	$ 1,223,100	$ 1,265,700	$ 1,303,600	$ 1,326,500	$ 1,096,000
Misc Expenses	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 28,000
Professional Services	$ 350,100	$ 335,600	$ 331,900	$ 332,400	$ 332,900	$ 332,900	$ 332,900
Training and Travel	$ 64,800	$ 54,600	$ 50,500	$ 50,100	$ 40,100	$ 40,100	$ 40,100
Wheeling	$ 746,000	$ 768,000	$ 791,000	$ 815,000	$ 839,000	$ 839,000	$ 839,000
Transmission Wheeling	$ 746,000	$ 768,000	$ 791,000	$ 815,000	$ 839,000	$ 839,000	$ 839,000
Grand Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Cowlitz Falls Project 7 Year Outlook Detail							
	2021	2022	2023	2024	2025	2026	2027
O&M	$ 2,527,900	$ 2,825,550	$ 1,825,700	$ 1,514,700	$ 1,812,600	$ 2,051,500	$ 1,846,500
A&G	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900	$ 13,900
Bank Fees	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Communications Fiber - User Fee	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500	$ 6,500
Licenses & Permits	$ 6,400	$ 6,400	$ 6,400	$ 6,400	$ 6,400	$ 6,400	$ 6,400
Electric Plant - Generation	$ 457,400	$ 228,400	$ 44,400	$ 44,400	$ 99,400	$ 254,400	$ 89,400
230 kV Circuit Maintenance	$ 45,000					$ 45,000	
AVR Testing	$ 60,000					$ 45,000	
Cooling Water Valves	$ 8,000						
Electrical Contractors	$ 45,000	$ 80,000					
Electrical Parts	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000
Generator Parameter Validation Testing	$ 160,000					$ 120,000	
GSU Transformer Maintenance		$ 45,000					
GSU Transformer Testing							$ 45,000
Instrumentation Parts	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Maintenance Supplies for Electric Plant	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400
Mechanical Contractors	$ 45,000						
Mechanical Parts	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000
Protective Relay Testing					$ 55,000		
Transformer Oil Processing & Testing	$ 1,000	$ 30,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Turbine Maintenance Seals	$ 50,000						
Turbine Shaft Seals		$ 30,000					
Fish & Wildlife	$ 103,900	$ 188,700	$ 90,700	$ 93,200	$ 115,200	$ 269,200	$ 274,200
Creel Study	$ 18,000				$ 20,000		
ESA BiOp Studies		$ 100,000				$ 174,000	$ 179,000
Fish & Wildlife Contract Services (RTL Consulting)	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Habitat & Fish Recovery Services (WDFW)	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Habitat Management; Fertilizer, Spraying, Plants	$ 8,700	$ 9,000	$ 9,000	$ 9,300	$ 9,300	$ 9,300	$ 9,300
Kid's Trout Derby	$ 5,200	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400
Mitigation Trout Program	$ 43,000	$ 45,000	$ 47,000	$ 49,000	$ 51,000	$ 51,000	$ 51,000
Noxious Weed Control Contractor	$ 9,000	$ 9,300	$ 9,300	$ 9,500	$ 9,500	$ 9,500	$ 9,500
Insurance	$ 202,000	$ 206,250	$ 210,500	$ 214,800	$ 219,000	$ 219,000	$ 219,000
Excess Liability Insurance	$ 19,000	$ 20,000	$ 21,000	$ 22,000	$ 23,000	$ 23,000	$ 23,000
Liability Insurance	$ 10,000	$ 10,500	$ 11,000	$ 11,500	$ 12,000	$ 12,000	$ 12,000
Other	$ 3,000	$ 3,250	$ 3,500	$ 3,800	$ 4,000	$ 4,000	$ 4,000
Property Insurance	$ 170,000	$ 172,500	$ 175,000	$ 177,500	$ 180,000	$ 180,000	$ 180,000
License Compliance	$ 123,100	$ 136,600	$ 137,600	$ 138,600	$ 139,600	$ 139,600	$ 139,600
Cooper Compliance Audit							
FERC Fixed Fees	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000
Port Blakely Road Access Agreement	$ 17,500	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000
USGS Gauging Station Fees	$ 40,600	$ 41,600	$ 42,600	$ 43,600	$ 44,600	$ 44,600	$ 44,600
WECC Fees							
Misc Expenses	$ 203,500	$ 166,900	$ 175,300	$ 175,700	$ 175,800	$ 169,700	$ 169,700
CEATI Membership	$ 36,000	$ 36,000	$ 42,000	$ 42,000	$ 42,000	$ 42,000	$ 42,000
CEATI Projects	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
CF Project Telephones	$ 7,000	$ 7,000	$ 7,300	$ 7,300	$ 7,300	$ 7,300	$ 7,300
CFP Cell Phones	$ 1,600	$ 1,600	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
Communications (Radios, etc)	$ 5,900	$ 5,900	$ 6,100	$ 6,100	$ 6,100		
Electric Utilities - Secondary Power Feed	$ 11,200	$ 11,500	$ 11,800	$ 12,100	$ 12,400	$ 12,400	$ 12,400
Garbage Service	$ 2,300	$ 2,400	$ 2,400	$ 2,500	$ 2,500	$ 2,500	$ 2,500
NHA Membership		$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 21,000
NWHA Membership	$ 800	$ 800	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Operator Remote SCADA Communications	$ 8,000	$ 8,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000
Radio / Pager System Improvements	$ 25,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
Security Assessment	$ 85,000						
Security Improvements		$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Security/Plant Locks	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Shelving & Furniture	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
Subscriptions, Prints, Copies and Maps	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,000	$ 2,000	$ 2,000
Misc Hydraulic Plant	$ 289,800	$ 320,000	$ 313,000	$ 143,000	$ 186,000	$ 146,000	$ 231,000
Buffer Zone Management	$ 2,000	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200
Computer Software	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
Contract Crane Inspections	$ 12,600	$ 12,600	$ 14,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000
Convert Engineering Drawings to AutoCAD	$ 20,000	$ 60,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Drainage Pump					$ 20,000		
Drainage Sump Study		$ 35,000					
Drainage System	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
HVAC	$ 3,200	$ 3,200	$ 3,500	$ 3,500	$ 3,500	$ 3,500	$ 3,500
HVAC Replacement Office Area					$ 20,000		
Inspections	$ 2,200	$ 2,200	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Maintenance Management System			$ 200,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000
Manuals, Major Tools, Safety Improvements							
North Rock Wall Scaling		$ 75,000					$ 85,000
Plant Lighting	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Plant Water Wells & Testing	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200
Rentals							
Roadway Gates		$ 3,000			$ 3,000	$ 3,000	$ 3,000
Safety Improvements	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Service Water VFD & Controls Replacement		$ 16,000					
Smoke Detectors & Fire Water Systems	$ 2,600	$ 2,600	$ 2,600	$ 2,600	$ 2,600	$ 2,600	$ 2,600
Structure Maintenance; Concrete, Fencing	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Temporary Offices	$ 200,000	$ 60,000					
Tools & Equipment	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Office Supplies and Expenses							

Cowlitz Falls Project 7 Year Outlook Detail							
	2021	2022	2023	2024	2025	2026	2027
Document Management Software							
Professional Services	$ 20,900	$ 21,300	$ 21,800	$ 22,200	$ 22,700	$ 22,700	$ 22,700
Auditing	$ 20,900	$ 21,300	$ 21,800	$ 22,200	$ 22,700	$ 22,700	$ 22,700
Recreation	$ 293,800	$ 842,500	$ 368,500	$ 210,200	$ 364,800	$ 340,800	$ 210,800
Advertising	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Alternate Take-Out Site 1 - Construction			$ 80,000				
Alternate Take-Out Site 1 - Design		$ 30,000					
Alternate Take-Out Site 2 - Construction			$ 80,000				
Alternate Take-Out Site 2 - Design		$ 30,000					
Building Maintenance	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200
Campground Electrical Replacement -Design					$ 64,000		
Campground Fishing Pond Assessment & Design		$ 85,000					
Campground Hosts	$ 115,400	$ 120,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000
Campground Internet	$ 3,000	$ 3,000	$ 3,200	$ 3,200	$ 3,400	$ 3,400	$ 3,400
Campground Paving		$ 90,000			$ 90,000		
Campground Reservation Software	$ 5,000	$ 5,000	$ 5,200	$ 5,200	$ 5,400	$ 5,400	$ 5,400
Campground Telephone	$ 1,300	$ 1,300	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Contract Septic and Water Services	$ 25,000	$ 27,000	$ -	$ -	$ -	$ -	$ -
Contract Services (Backhoe, Gravel)	$ 7,000	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 7,400
Contract Services (Dock Installation and Removal)	$ 2,500	$ 2,500	$ 2,700	$ 2,700	$ 2,700	$ 2,700	$ 2,700
Contract Services (Sweeping)		$ -	$ -	$ -	$ -	$ -	$ -
Copper Creek Take Out Site Parking - Construction		$ 225,000					
Copper Creek Take Out Site Parking - Design	$ 75,000						
Day Use Park Paving						$ 130,000	
D-Loop Electrical Design & Feed Replacements		$ 30,000					
Electric Utilities	$ 6,200	$ 6,400	$ 6,600	$ 6,800	$ 7,000	$ 7,000	$ 7,000
Fiber to Campground Extension Fee		$ 50,000					
Garbage Service	$ 6,200	$ 6,400	$ 6,400	$ 6,600	$ 6,600	$ 6,600	$ 6,600
Ground Maintenance	$ 3,200	$ 3,200	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400
Noxious Weed Control	$ 5,000	$ 5,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000
Open/Close Packwood Gate	$ 2,600	$ 2,800	$ 2,800	$ 2,800	$ 2,800	$ 2,800	$ 2,800
Operation Supplies	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200
Park Equipment Repairs	$ 3,200	$ 3,200	$ 3,500	$ 3,700	$ 3,700	$ 3,700	$ 3,700
Portable Restrooms	$ 2,200	$ 2,300	$ 2,300	$ 2,400	$ 2,400	$ 2,400	$ 2,400
Potable Water and Septic System Testing	$ 2,000	$ 2,000	$ 2,200	$ 2,200	$ 2,200	$ 2,200	$ 2,200
Recreation Assessment		$ 75,000					
Repairs & Supplies	$ 9,000	$ 10,000	$ 10,000	$ 11,000	$ 11,000	$ 11,000	$ 11,000
Sewer & Water System Maintenance	$ 6,400	$ 6,400	$ 6,400	$ 6,400	$ 6,400	$ 6,400	$ 6,400
Sign Replacements	$ 2,200	$ 2,200	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Tools & Equipment	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Resv., Dams & Waterways	$ 647,500	$ 498,900	$ 286,900	$ 296,400	$ 313,900	$ 313,900	$ 313,900
1D Sediment Transport Study	$ 100,000						
Bridge Inspection & Analysis			$ 106,000				
Contract Diesel Generator Maintenance	$ 10,000	$ 10,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Contract Maintenance Elevator	$ 15,000	$ 15,200	$ 15,200	$ 15,200	$ 15,200	$ 15,200	$ 15,200
Contract Operators	$ 70,000						
Dam Instrumentation	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000
Debris Barrier Coating & Cathodic Protection - Design	$ 160,000						
Debris Barrier Corrosion Inhibitor	$ 10,000		$ 10,000		$ 10,000	$ 10,000	$ 10,000
Debris Barrier Parts	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Debris Removal	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000
Diving Services	$ 12,500	$ 13,000	$ 13,500	$ 14,000	$ 14,500	$ 14,500	$ 14,500
Equipment Rental	$ 30,800	$ 34,000	$ 42,000	$ 42,000	$ 24,000	$ 24,000	$ 24,000
FERC Part 12 Recommendations				$ 125,000	$ 150,000	$ 150,000	$ 150,000
Governor	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Governor 3D CAM	$ 40,000						
Log Boom Maintenance	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Mechanical & Piping	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000
Metal	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Painting & Special Coatings	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200
Re-coat Slot Covers		$ 60,000					
Replace Sluice Gate Bulkhead Seals		$ 2,500					
SCADA Support	$ 50,000	$ 50,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Sedimentation Report		$ 50,000					
Seismic Study	$ 100,000	$ 150,000					
Service Air Compressor	$ 1,000	$ 1,000					
Spillway Gates	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Trunnion Friction Testing		$ 65,000					
Turbidity Sensor Communication	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Welding/Machinery Services		$ -	$ -	$ -	$ -	$ -	$ -
Structures	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300
Consumable Janitorial Supplies	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300	$ 1,300
Supervision & Engineering	$ 13,600	$ 13,600	$ 14,600	$ 13,800	$ 13,800	$ 13,800	$ 13,800
FERC Dam Movement Survey	$ 8,400	$ 8,400	$ 8,800	$ 8,800	$ 8,800	$ 8,800	$ 8,800
Sedimentation Survey	$ 5,200	$ 5,200	$ 5,800	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Surveying		$ -	$ -	$ -	$ -	$ -	$ -
Supplies & Expenses	$ 22,100	$ 22,100	$ 22,100	$ 22,100	$ 22,100	$ 22,100	$ 22,100
Consumable First Aid Supplies	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200	$ 3,200
Consumable Safety Supplies & PPE	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400
Fall Protection Equipment	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
FR Clothing	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000
Rope Access Gear	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Small Tools	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Tacoma Related Expenses							

Cowlitz Falls Project 7 Year Outlook Detail

	2021	2022	2023	2024	2025	2026	2027
Taxes - County	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700
County Taxes	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700
Taxes - Ecology	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500
Ecology Water Tax	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500
Taxes - Privilege	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900
Privilege Tax	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900	$ 56,900
Transmission Maintenance	$ 70,000	$ 100,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
Line Maintenance		$ -	$ -	$ -	$ -	$ -	$ -
ROW Maintenance	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
Transmission Line Corridor Planting	$ 10,000	$ 40,000					
OR&R	$ 1,425,400	$ 5,065,400	$ 5,959,400	$ 6,024,400	$ 1,303,400	$ 1,935,000	$ 1,547,000
Electric Plant - Generation	$ 620,000	$ 144,000		$ 433,000	$ 503,000		$ 220,000
5-Ton Bridge Crane	$ 500,000						
Battery Bank Replacement				$ 80,000			
Exciter Brush Dust Vacuum System		$ 120,000					
Exciter Replacement				$ 125,000	$ 500,000		
Generator Cooling Water Refurbishment				$ 78,000			
Generator Hatch Cover Seals & Drains	$ 120,000						
Generator Protective Relay Replacement				$ 150,000			
Revenue Meters		$ 24,000					
South Well Pump					$ 3,000		
Surge Arrestor Replacement							$ 20,000
Unit Instrumentation							$ 200,000
Fish & Wildlife	$ 50,000	$ 80,000	$ 85,000		$ 400,000		
Alternative Fishing Derby Site Development	$ 50,000		$ 85,000		$ 400,000		
Derby Site Reinforcement / Habitat Enhancement		$ 30,000					
Man-Made Island Canal		$ 50,000					
Misc Expenses	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400		
Server/Cameras/Office Machines/Computers	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400		
Misc Hydraulic Plant	$ 225,000	$ 1,903,000				$ 50,000	$ 188,000
Concrete Scanner		$ 25,000					
Control Room / Office Area Repairs	$ 40,000						
Drainage Sump Oil Skimmer							$ 36,000
Fire Detection System Upgrade							$ 42,000
Lathe		$ 18,000					
New Facility - Analysis/Design/Site Testing	$ 45,000						
New Facility - Construction		$ 1,800,000					
Security Improvements						$ 50,000	$ 50,000
Spillway Handrail & Guardrail	$ 140,000						
Station Air Compressor Replacement							$ 60,000
Warehouse Repairs		$ 60,000					
Recreation			$ 150,000				$ 501,000
Campground A Loop Restroom			$ 150,000				
Campground Electrical Replacement							$ 322,000
Campground Storage Building							$ 179,000
Resv., Dams & Waterways	$ 525,000	$ 2,871,000	$ 5,647,000	$ 5,556,000	$ 325,000	$ 1,847,000	$ 600,000
Boat Barrier Replacement			$ 120,000				
Debris Barrier Coating & Cathodic Protection - Construction		$ 400,000					
Diesel Generator Connection to Spillway Gates 2 & 3		$ 14,000					
Downstream Boat Ramp		$ 250,000					
Gantry Crane Controls and Drive Upgrade - Design					$ 150,000		
Gantry Crane Upgrades							$ 600,000
Mobile Diesel Generator & Log Bronc Cover		$ 25,000					
Sluice Gate Construction			$ 2,600,000	$ 5,356,000			
Sluice Gate Design		$ 835,000					
Sluice Gate Replacement - CFD & Physical Model Design	$ 330,000	$ 511,000					
Sonar & Turbidity Sensors	$ 150,000						
Spillway 1 Apron Repairs						$ 300,000	
Spillway 4 Rail Extension - Alternative Analysis	$ 45,000						
Spillway 4 Rail Extension - Construction			$ 1,082,000				
Spillway 4 Rail Extension - Design		$ 525,000					
Spillway Gate Control				$ 200,000			
Spillway Gate Finite Element Analysis			$ 75,000				
Spillway Gate Hoist Covers		$ 120,000					
Tailrace Repairs & Improvements - Design					$ 175,000		
Tailrace Repairs & Improvements - Installation						$ 1,547,000	
Trash Rake Construction			$ 1,770,000				
Trash Rake Design		$ 191,000					
Transportation Equipment		$ 62,000	$ 72,000	$ 30,000	$ 70,000	$ 38,000	$ 38,000
Mower		$ 22,000					
RT Fork Lift					$ 70,000		
Side By Side			$ 30,000	$ 30,000			
Vehicle for Gen Superintendent		$ 40,000					
Vehicle for Replacement						$ 38,000	$ 38,000
Vehicle for Resource Worker			$ 42,000				
REV	$ (8,915,800)	$ (13,547,750)	$ (13,610,300)	$ (13,518,300)	$ (9,244,300)	$ (10,193,200)	$ (9,426,900)
Project Reimbursement / Revenue	$ (8,169,800)	$ (12,779,750)	$ (12,819,300)	$ (12,703,300)	$ (8,405,300)	$ (9,354,200)	$ (8,587,900)
BPA Project Reimbursement	$ (8,090,800)	$ (12,695,750)	$ (12,730,300)	$ (12,609,300)	$ (8,306,300)	$ (9,255,200)	$ (8,488,900)
BPA Project Reimbursement (Carry Over)							
Campground Revenue	$ (75,000)	$ (80,000)	$ (85,000)	$ (90,000)	$ (95,000)	$ (95,000)	$ (95,000)
Interest Income	$ (4,000)	$ (4,000)	$ (4,000)	$ (4,000)	$ (4,000)	$ (4,000)	$ (4,000)
Tacoma Fish Collector Reimbursement		$ -	$ -	$ -	$ -	$ -	$ -
Transmission Wheeling	$ (746,000)	$ (768,000)	$ (791,000)	$ (815,000)	$ (839,000)	$ (839,000)	$ (839,000)
Transmission Wheeling - Rev Entry	$ (746,000)	$ (768,000)	$ (791,000)	$ (815,000)	$ (839,000)	$ (839,000)	$ (839,000)

Cowlitz Falls Project 7 Year Outlook Detail							
	2021	2022	2023	2024	2025	2026	2027
Special O&M	$ 4,216,500	$ 4,888,800	$ 5,034,200	$ 5,164,200	$ 5,289,300	$ 5,367,700	$ 5,194,400
A&G	$ 552,100	$ 597,300	$ 619,400	$ 637,400	$ 656,100	$ 656,100	$ 656,100
A&G Exhibit F	$ 537,700	$ 582,900	$ 605,000	$ 623,000	$ 641,700	$ 641,700	$ 641,700
Misc	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400	$ 5,400
Office Supplies	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000
Debt - 2021 CFP Intercompany Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2021 CFP Intercompany - Interest	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2021 CFP Intercompany - Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Health, Welfare, Safety	$ 16,000	$ 16,000	$ 11,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000
Arc Flash Training			$ 3,000				
Confined Space Training	$ 8,000						
Fall Protection Training		$ 8,000					
Rope Access Training	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000	$ 8,000
Labor - CFP - Cobra	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Retiree/COBRA Med Ins - Premiums & Claims	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Labor - CFP - Flu Shots	$ 400	$ 400	$ 400	$ 400	$ 400	$ 400	$ 400
Flu Shot Clinics	$ 400	$ 400	$ 400	$ 400	$ 400	$ 400	$ 400
Labor - CFP - L&I	$ 16,200	$ 28,100	$ 30,800	$ 31,700	$ 32,700	$ 32,700	$ 32,700
L&I - Employer	$ 16,200	$ 28,100	$ 30,800	$ 31,700	$ 32,700	$ 32,700	$ 32,700
Labor - CFP - Long Term Disability	$ 3,200	$ 4,200	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500
Long Term Disability	$ 3,200	$ 4,200	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500
Labor - CFP - Medical Insurance	$ 411,400	$ 486,900	$ 501,500	$ 510,000	$ 520,000	$ 520,000	$ 520,000
Employee Medical Insurance	$ 411,400	$ 486,900	$ 501,500	$ 510,000	$ 520,000	$ 520,000	$ 520,000
Labor - CFP - Misc Pension & Benefits	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Misc Pension & Benefits, CDL, Medical Exam, etc	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Labor - CFP - OT	$ 63,000	$ 66,400	$ 68,900	$ 71,100	$ 73,200	$ 73,200	$ 73,200
OT Benefits	$ 7,000	$ 8,900	$ 9,600	$ 9,900	$ 10,200	$ 10,200	$ 10,200
OT Taxes	$ 4,000	$ 4,100	$ 4,300	$ 4,500	$ 4,600	$ 4,600	$ 4,600
OT Wages	$ 52,000	$ 53,400	$ 55,000	$ 56,700	$ 58,400	$ 58,400	$ 58,400
Labor - CFP - Paid Family Leave	$ 2,100	$ 3,000	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400
Paid Family Leave Benefit	$ 2,100	$ 3,000	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400
Labor - CFP - PCORI	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
PCORI ACA Requirement	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
Labor - CFP - PERS	$ 131,400	$ 171,500	$ 177,600	$ 180,000	$ 185,000	$ 185,000	$ 185,000
Employer PERS	$ 131,400	$ 171,500	$ 177,600	$ 180,000	$ 185,000	$ 185,000	$ 185,000
Labor - CFP - PL Cash Out	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
PL Cash Out	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
Labor - CFP - Social Security Medicare	$ 100,400	$ 129,000	$ 133,500	$ 137,500	$ 141,600	$ 141,600	$ 141,600
Social Security Medicare	$ 100,400	$ 129,000	$ 133,500	$ 137,500	$ 141,600	$ 141,600	$ 141,600
Labor - CFP - Standby	$ 37,100	$ 38,300	$ 39,500	$ 40,700	$ 42,000	$ 42,000	$ 42,000
Standby Pay	$ 37,100	$ 38,300	$ 39,500	$ 40,700	$ 42,000	$ 42,000	$ 42,000
Labor - CFP - STD	$ 2,000	$ 2,000	$ 2,000	$ 2,100	$ 2,200	$ 2,200	$ 2,200
Short Term Disability	$ 2,000	$ 2,000	$ 2,000	$ 2,100	$ 2,200	$ 2,200	$ 2,200
Labor - CFP - Term Insurance	$ 1,400	$ 1,600	$ 1,600	$ 1,700	$ 1,700	$ 1,700	$ 1,700
Term Ins Benefit	$ 1,400	$ 1,600	$ 1,600	$ 1,700	$ 1,700	$ 1,700	$ 1,700
Labor - CFP - VEBA	$ 12,200	$ 16,000	$ 16,500	$ 17,000	$ 17,500	$ 17,500	$ 17,500
VEBA Benefit	$ 12,200	$ 16,000	$ 16,500	$ 17,000	$ 17,500	$ 17,500	$ 17,500
Labor - CFP - VEBA Cash out	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
VEBA Cash Out	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Labor - CFP - Wages	$ 1,312,500	$ 1,686,700	$ 1,745,000	$ 1,797,400	$ 1,851,300	$ 1,906,800	$ 1,964,000
Wages	$ 1,312,500	$ 1,686,700	$ 1,745,000	$ 1,797,400	$ 1,851,300	$ 1,906,800	$ 1,964,000
Labor - ES Support	$ 1,067,100	$ 1,178,100	$ 1,223,100	$ 1,265,700	$ 1,303,600	$ 1,326,500	$ 1,096,000
ES Support Overhead	$ 439,200	$ 484,200	$ 503,200	$ 524,200	$ 539,900	$ 539,900	$ 539,900
ES Support Wages	$ 627,900	$ 693,900	$ 719,900	$ 741,500	$ 763,700	$ 786,600	$ 556,100
Misc Expenses	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 28,000	$ 28,000
CF Vehicle and Equipment Fuel	$ 16,000	$ 16,000	$ 16,000	$ 16,000	$ 16,000	$ 16,000	$ 16,000
CF Vehicle Maintenance	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Professional Services	$ 350,100	$ 335,600	$ 331,900	$ 332,400	$ 332,900	$ 332,900	$ 332,900
Communication Services	$ 3,300	$ 3,300	$ 3,300	$ 3,300	$ 3,300	$ 3,300	$ 3,300
Computer Services	$ 5,600	$ 5,600	$ 5,600	$ 5,600	$ 5,600	$ 5,600	$ 5,600
Dam Safety Consultant	$ 84,000	$ 84,000	$ 84,000	$ 84,000	$ 84,000	$ 84,000	$ 84,000
Engineering Consultants	$ 65,000	$ 65,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000	$ 75,000
Fire District Payment	$ 19,000	$ 19,500	$ 20,000	$ 20,500	$ 21,000	$ 21,000	$ 21,000
Labor Consultant	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Legal Services (BiOp & FERC Issues)	$ 24,200	$ 24,200	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000
Legal Services (General Issues)	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Long Range Plan Analysis	$ 50,000	$ 35,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Project Analysis	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Records Management							
WECC & NERC Consultants	$ 58,000	$ 58,000	$ 58,000	$ 58,000	$ 58,000	$ 58,000	$ 58,000
Training and Travel	$ 64,800	$ 54,600	$ 50,500	$ 50,100	$ 40,100	$ 40,100	$ 40,100
American Fisheries Society Meeting	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
American Governor Analog Gov Training		$ 7,000	$ 8,500	$ 8,500	$ 8,500	$ 8,500	$ 8,500
AVO Circuit Breaker Maintenance	$ 2,400			$ 5,000			
AVO Substation Maintenance I		$ 5,000		$ 5,000			
AVO Thermography I				$ 5,000			
AVO Thermography II		$ 5,000			$ 5,000	$ 5,000	$ 5,000
CEATI Annual Meeting	$ 2,200	$ 2,200					
CEATI DSIG Meeting		$ 1,400	$ 1,600	$ 1,600	$ 1,600	$ 1,600	$ 1,600
CEATI HPLIG Meeting		$ 1,400	$ 1,600	$ 1,600	$ 1,600	$ 1,600	$ 1,600
Computer Training	$ 800	$ 800	$ 800	$ 800	$ 800	$ 800	$ 800
EPTC Switching & Grounding		$ 7,000	$ 7,000				
EPTC Elect Fundamentals		$ 7,000					
EPTC Power Plant Operation			$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 7,000

Cowlitz Falls Project 7 Year Outlook Detail							
	2021	2022	2023	2024	2025	2026	2027
EPTC Relay Protection		$ 3,500	$ 3,500	$ 3,500	$ 3,500	$ 3,500	$ 3,500
HydroVision	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
NW Hydro Forum	$ 400	$ 400	$ 500	$ 500	$ 500	$ 500	$ 500
NWHA Annual Meeting	$ 500	$ 500	$ 600	$ 600	$ 600	$ 600	$ 600
NWHA Workshop	$ 600	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500
NWPPA Admin Asst Training	$ 2,400	$ 2,400	$ 2,400				
NWPPA Leadership Training	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400	$ 3,400
Operator Training Development	$ 45,000						
Pesticide Application Training	$ 800	$ 800	$ 800	$ 800	$ 800	$ 800	$ 800
Records Training	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700	$ 700
TPC Elect Workshop			$ 6,000				
Water / Wastewater Training	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200	$ 1,200
WPUDA Admin Roundtable	$ 600	$ 600	$ 600	$ 600	$ 600	$ 600	$ 600
WPUDA Records Roundtable	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300
Wheeling	**$ 746,000**	**$ 768,000**	**$ 791,000**	**$ 815,000**	**$ 839,000**	**$ 839,000**	**$ 839,000**
Transmission Wheeling	**$ 746,000**	**$ 768,000**	**$ 791,000**	**$ 815,000**	**$ 839,000**	**$ 839,000**	**$ 839,000**
Transmission Wheeling - Offset Entry	$ 746,000	$ 768,000	$ 791,000	$ 815,000	$ 839,000	$ 839,000	$ 839,000
Grand Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

From: Sonoda,Cherie D (BPA) - PGAC-RICHLAND

Sent: Mon Jul 20 10:16:45 2020

To: Deatherage,Drew S (BPA) - PGA-6; Carlson,Debbie (BPA) - PGAC-RICHLAND

Cc: Wellner,Michael T (BPA) - PGA-6

Subject: RE: Cost of Power for CFP

Importance: Normal

Attachments: image001.png; image002.png; image003.png

Debbie- can you send Drew the 2019 data?

And yes to your question on if CFP generated at 90% of their average for 2014-2019? Always open to a better way to represent the data, so let me know if there is a smarter way to show approximately what their current cost of power is ranked among others and what it would be if we upped their budget as they are requesting. Just from the information we have it looks like they would quickly become one of our more expensive Projects if they are allowed the increase?

From: Deatherage,Andrew S (BPA) - PGAF-6 <asdeatherage@bpa.gov>
Sent: Monday, July 20, 2020 10:12 AM
To: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>; Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>

Cc: Wellner,Michael T (BPA) - PGA-6 <mtwellner@bpa.gov>
Subject: RE: Cost of Power for CFP

Hi Cherie,

I don't have the 2019 data. Could you please send that?

Also, do you mean if CFP generated at 90% of their average for 2014-2019?

Thanks,

Drew Deatherage | Economist

Federal Hydro Projects Operations

Bonneville Power Administration

bpa.gov | P 503-230-5894 | Mail: PGAF-6

From: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>
Sent: Monday, July 20, 2020 9:41 AM

To: Deatherage,Andrew S (BPA) - PGAF-6 <asdeatherage@bpa.gov>; Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>
Cc: Wellner,Michael T (BPA) - PGA-6 <mtwellner@bpa.gov>
Subject: RE: Cost of Power for CFP

Hi Andrew,

If they generated at 90% and had the increases requested for FY21 and FY22 to their costs, where would that put them in reference to our other projects. Basically looking to update the graph below.

From: Deatherage,Andrew S (BPA) - PGAF-6 <asdeatherage@bpa.gov>
Sent: Friday, July 17, 2020 4:38 PM
To: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>; Wellner,Michael T (BPA) - PGA-6 <mtwellner@bpa.gov>
Subject: RE: Cost of Power for CFP

Hi Debbie/Cherie,

I quickly put in the numbers that Debbie sent and used my own assumptions for projected MWh generated. Using the 1996-2018 generation data that was sent to me back when I did the last analysis, I came up with 10-90 percentile estimate to use as a proxy for a dry, average, and wet water year. These are in dollars per MWh. Below are the graphics. I've also attached the excel file I used, in case you need to get the graphs or make any changes. If you have any questions, please feel free to reach out. Also, I've CC'd Mike Wellner who has been working on some Cowlitz Falls things. I figured I ought to loop him in.

Thanks,

2021

2022

10%

$ 52.17

$ 63.83

50%

$ 40.38

$ 49.41

90%

$ 35.07

$ 42.91

Drew Deatherage | Economist

Federal Hydro Projects Operations

Bonneville Power Administration

bpa.gov | P 503-230-5894 | Mail: PGAF-6

From: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>
Sent: Friday, July 17, 2020 3:13 PM
To: Deatherage,Andrew S (BPA) - PGAF-6 <asdeatherage@bpa.gov>
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>
Subject: RE: Cost of Power for CFP

The final FY 2020 budget approval was for $5,042,120.

For FY 2021 they are looking at $9,934,500 and for FY 2021 they want $12,155,350

The carryover – was that from nearly $1M FY 2019 when Lewis decided to use $500K to offset the FY 2020 budget? And the rest went to pay for rock wall cost and relay trips? They are now down to ~$180K. I don't know if we will ask for it back or apply it to FY 2021.

Concerning generation projections – I am guessing you can make your own assumptions.

Sorry so late in getting back to you…

THANK YOU!!

debbie

From: Deatherage,Andrew S (BPA) - PGAF-6 <asdeatherage@bpa.gov>
Sent: Friday, July 17, 2020 12:55 PM
To: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>
Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>
Subject: RE: Cost of Power for CFP

Hi Debbie/Cherie,

In this file, I am assuming this is the current 2020 budget. For 2021 and 2022 would the increase of $4M and $7M be over the $4,555,120 or that plus the $500,000 carry-over?

Also, does Cowlitz Falls Project have any generation projections for those years or can I make my own assumptions?

Thanks,

Drew Deatherage | Economist

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From: Carlson,Debbie (BPA) - PGAC-RICHLAND <dcarlson@bpa.gov>
Sent: Friday, July 17, 2020 12:40 PM
To: Deatherage,Andrew S (BPA) - PGAF-6 <asdeatherage@bpa.gov>

Cc: Sonoda,Cherie D (BPA) - PGAC-RICHLAND <csonoda@bpa.gov>
Subject: Cost of Power for CFP

'Afternoon –

Cherie asked I forward the attached document so you could help us determine the cost of power at the Cowlitz Falls Project (you did something similar for us at the end of November 2019). The CFP intends to increase the annual operating budget by $4M in FY 2021 and $7M in FY 2022. We were wondering how these increased could/would affect the cost of power.

Unfortunately I am OOH (out of the home) at some point this afternoon and not return until late Monday evening), but I am certain if you have questions Cherie can help you. ☺

Thank you so much for your help (and insight).

debbie