Exh. BDR-1T
Docket UE-230172
Witness: Brad D. Richards

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PACIFICORP dba PACIFIC POWER & LIGHT COMPANY Respondent.	Docket UE-230172

PACIFICORP

DIRECT TESTIMONY OF BRAD D. RICHARDS

March 2023 (REFILED April 19, 2023)

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Q. Please state your name, business address, and current position with PacifiCorp d/b/a Pacific Power & Light Company (PacifiCorp or Company).

A. My name is Brad D. Richards. My business address is 1407 West North Temple, Suite 210, Salt Lake City, Utah 84116. My title is Vice President of Thermal Generation.

I. QUALIFICATIONS

Q. Please describe your education and professional experience.

A. I have 22 years of power plant commissioning, operations, and maintenance experience. I was previously the Managing Director of Gas and Geothermal Generation from January 2018 to September 2021. For 17 years before that, I held a number of positions of increasing responsibility within PacifiCorp's generation organization and with Calpine Corporation in power plant commissioning and operations. In my current role, I am responsible for operating and maintaining PacifiCorp's coal, natural gas-fired, and geothermal generation fleet.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I submitted testimony on behalf of the Company in proceedings before the Utah Public Service Commission.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony in this case?

A. My testimony provides additional details on the ongoing capital costs at the Jim Bridger and Colstrip facilities that have been included in this proceeding. These capital costs are necessary to continue operating these plants and are not life

extending capital additions or required to achieve compliance with new environmental regulations.

III. JIM BRIDGER CAPITAL COSTS

Q. Can you provide a brief breakdown of the capital costs for the Jim Bridger facility that are included in this proceeding?

A. Yes, as indicated in the table below I have broken down the capital additions that are included in this proceeding into various categories. As discussed in detail in the direct testimony of Company witness Sherona L. Cheung, pro forma capital costs for Jim Bridger Units 1 and 2 are included in rates at a full Washington-allocated share, while pro forma capital costs for Jim Bridger Units 3, 4 and Colstrip Unit 4 are included on a pro-rated basis. Table 1 below summarizes the total Jim Bridger and Colstrip project costs, as well as these costs reflected on a pro-rated and Washington's allocated share of these pro-rated costs.

Table 1

	Total-Company Costs	**Pro-rated Total-Company Costs**	**Pro-Rated Washington Costs**
Emissions & Environmental Compliance	$61.9 million	$10.0 million	$2.2 million
Other Maintenance & General Plant	$52.3 million	$10.1 million	$2.2 million
Gas Conversion	$20.9 million	$20.9 million	$4.6 million
Total	**$135.0 million**	**$41.0 million**	**$9.1 million**

A. Jim Bridger Gas Conversion

Q. Please provide a brief explanation of the process for converting a coal-fired unit to a gas-fired unit at the Jim Bridger facility?

A. The natural gas conversions of Jim Bridger Units 1 and 2 require retrofitting of the boilers with natural gas burners and flame scanners as well as construction of a distribution pipeline which can provide a sufficient supply of natural gas. Certain coal and ash handling equipment will be isolated from the boilers. Additionally, the project requires new filters, gas heaters, pressure regulators, safety valves, high- and low-pressure valves, piping, pipe supports, instrumentation, controls, meters, and other equipment to operate reliably and safely.

Q. Can you provide a brief timeline for when the work will be completed on Jim Bridger Units 1 and 2 to convert these units to natural gas?

A. The timeline is projected to complete both unit conversions and be firing on natural gas by May 1, 2024. Engineering and material purchasing is already underway. All equipment will be supplied no later than December 12, 2023. Pre-outage construction will begin by October 5, 2023. The units will be offline by January 1, 2024. Unit 2 will be completed first, immediately followed by Unit 1 in conjunction with the planned Unit 1 overhaul.

B. Emissions and Environmental Compliance

Q. Can you provide a brief overview of the approximately $61.9 million total-company (approximately $13.7 million Washington-allocated) that PacifiCorp will spend on Emissions and Environmental Compliance?

A. The majority of the planned spend for 2023 and 2024 for emissions and

environmental compliance is for the Flue Gas Desulfurization (FGD) Pond #3 project ($40.8 million total-Company, or $9.0 million Washington-allocated), which is for the construction of a 4,900 acre-feet double-lined pond. This project is to adhere to the Environmental Protection Agency's coal combustion residuals rule. The rule no longer allows FGD waste to be placed in an unlined pond. The best option for meeting this requirement is to convert the plant's evaporation pond to a lined FGD Pond. The existing unlined FGD Pond #2 will then stop receiving FGD wastewater once FGD Pond #3 is operational. An additional $323.3 thousand total-company costs, or approximately $71.7 thousand on a Washington-allocated basis, is also allocated for environmental compliance for tunable diode lasers necessary for selective catalytic reduction (SCR) system performance. The remaining $20.8 million total-company costs, or $4.6 million on a Washington-allocated basis, is planned for environmental maintenance for equipment such as precipitators, scrubbers, and SCRs.

Q. Were these capital costs normal, expected, and necessary to continue to keep the plant in good working order?

A. Yes.

Q. Are these capital investments made primarily for the purpose of extending the life of this plant?

A. No.

C. Other Maintenance & General Plant Capital Costs

Q. Can you provide a brief overview of the $52,268,788 (total-company) that PacifiCorp will spend on the Other Maintenance & General Plant Capital Costs?

A. These maintenance costs include projects supporting the cooling tower, burners, turbine, controls, computer network, motors, mobile equipment such as trucks, and loaders, and other smaller projects necessary for the operations of the plant.

Q. Were these capital costs normal, expected, and necessary to continue to keep the plant in good working order?

A. Yes.

Q. Are these capital investments made primarily for the purpose of extending the life of this plant?

A. No.

IV. COLSTRIP CAPITAL COSTS

Q. Can you provide a brief breakdown of the Colstrip major capital costs that are included in this proceeding?

A. Yes, please see the breakdown provided in Table 2 below.

Table 2

	Total-Company Costs	Pro-rated Total-Company Costs	Pro-Rated Washington Costs
Colstrip Design/Build Dry Waste	$4.4 million	$2.8 million	$0.6 million
Colstrip Unit 4 Final Superheat Section Replacement CY24	$2.5 million	$1.0 million	$0.2 million
Colstrip Unit 4 Overhaul Capital CY24	$2.3 million	$0.8 million	$0.2 million
Colstrip Condenser Tube Replacement CY24	$1.4 million	$0.6 million	$0.1 million
Projects less than $1 million	$4.3 million	$1.8 million	$0.4 million
Total	**$14.9 million**	**$7.0 million**	**$1.5 million**

A. Colstrip Design/Build Dry Waste

Q. Can you provide a brief overview of the $4.4 million total-company costs (approximately $1.0 million Washington-allocated) that PacifiCorp will spend on the design and build of Dry Waste disposal?

A. To meet the requirement of dry disposal of CCR at the Colstrip Effluent Holding Pond (EHP), a Dry Disposal System was installed. This System takes the CCR material that is removed by the wet scrubbers at Colstrip and dewaters that material so that it can be deposited in the EHP as a non-liquid material. The overall process includes an initial dewatering step that removes most of the free available water from the CCR material. This initial dewatering step utilizes a thickener, which removes water from the CCR material through a mechanical process that causes the CCR solids to settle out quickly and allows the water to be decanted off the top of the deep tank thickener and returned to the scrubbers for re-use. The CCR that remain are then pumped to the Dry Disposal System, which further dewaters the CCR material and the dry material is deposited in the final disposal area, the EHP. The Dry Disposal

System is a filter press technology with associated pumps, tanks, piping, conveyors, instrumentation, and controls to produce a dry CCR material. The Dry Disposal System is designed and built with backup equipment to meet the high reliability requirements for ongoing dry disposal of CCR material from Colstrip Units.

Q. Were these capital costs normal, expected, and necessary to continue to keep the plant in good working order?

A. Yes.

Q. Are these capital investments made primarily for the purpose of extending the life of this plant?

A. No.

B. <u>Colstrip Final Superheat Section Replacement</u>

Q. Can you provide a brief overview of the $2.5 million total-company costs (approximately $552.4 thousand Washington-allocated) that PacifiCorp will spend on the Final Superheat Section replacement for Unit 4?

A. The scope of this project includes a full replacement of the finishing superheater section of the Unit 4 boiler to help achieve original design superheat steam exit temperatures of 1,005 degrees Fahrenheit. The replacement will improve efficiency and lower the heat rate of the unit by approximately 200 BTU/kwhr. The current finishing superheat section is original and is expected to begin experiencing tube failures. Tube thinning due to fly ash erosion and sootblower erosion are expected to occur more frequently, as well as fly ash corrosion which occurs at or adjacent to large ash accumulations which the final superheat section is known to build. As time

goes on, these mechanisms will be more and more frequent and increase the number of unplanned outages.

C. Colstrip Unit 4 Overhaul for 2024

Q. Can you provide a brief overview of the $2.3 million total-company costs (approximately $505.3 thousand Washington-allocated) that PacifiCorp will spend on the Unit 4 Overhaul in 2024?

A. Overhauls are performed every 3-4 years on each unit and the last overhaul on Unit 4 was completed in 2020. These projects are required to maintain reliability and capability of the unit through the next overhaul. The 2024 overhaul project summary includes: Aux turbines Work, Turbine valve rebuilds, Boiler Coutant Bottom Repair, Boiler Bucket Burner and Aux Air Work, Air Preheater Basket Replacement, Boiler Water Wall Replacements, SOFA bucket replacement, TOFA bucket replacement, and Economizer tubes Replacement.

Q. Were these capital costs normal, expected and necessary to continue to keep the plant in good working order?

A. Yes.

Q. Are these capital investments made primarily for the purpose of extending the life of this plant?

A. No.

D. Colstrip Unit 4 Condenser Tube Replacement

Q. Can you provide a brief overview of the $1.4 million total-company costs (approximately $310.9 thousand Washington-allocated) that PacifiCorp will spend on the Unit 4 Condenser Tube Replacement in 2024?

A. Eddy current testing of the Unit 4 condenser has revealed deep pitting in several areas. Additionally, several of the Unit 4 condenser tubes are plugged. Replacement will resolve these issues.

V. CONCLUSION

Q. Please summarize your testimony.

A. My testimony explains the purpose of PacifiCorp's capital investments at the Jim Bridger and Colstrip facilities that are necessary for the continued operation of those plants and in the public interest. I recommend that the Commission approve the inclusion of these costs in Washington rates as prudent and necessary.

Q. Does this conclude your direct testimony?

A. Yes.