EXH. RJR-1T
DOCKET UE-19___
PCA 17 COMPLIANCE FILING
WITNESS: RONALD J. ROBERTS

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of **PUGET SOUND ENERGY** **For Approval if its April 2019 Power Cost Adjustment Mechanism Report**	**Docket UE-19____**

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF

RONALD J. ROBERTS

ON BEHALF OF PUGET SOUND ENERGY

APRIL 30, 2019

PUGET SOUND ENERGY

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF RONALD J. ROBERTS

TABLE OF CONTENTS

LIST OF EXHIBITS

PUGET SOUND ENERGY

PREFILED DIRECT TESTIMONY (NONCONFIDENTIAL) OF RONALD J. ROBERTS

I. INTRODUCTION

Q. Please state your name, business address, and position with Puget Sound Energy.

A. My name is Ronald J. Roberts. My business address is 355 110th Ave NE Bellevue, WA 98004. I am the Director of Generation and Natural Gas Storage for Puget Sound Energy ("PSE").

Q. What are your duties as Director of Generation and Natural Gas Storage for PSE?

A. I plan, organize, and direct PSE's energy production, including operations and maintenance of PSE's owned and jointly-owned generating facilities and PSE's thermal purchased power agreements. Furthermore, I assist PSE's Resource Acquisition team in performing due diligence evaluations of potential resource acquisitions. I am responsible for overseeing the safe operation of PSE's thermal, hydro, gas storage, and wind generation plants and optimizing their operation in a manner that will provide our customers with reliable and efficient power and develop our employees to their maximum potential.

Q. Have you prepared an exhibit describing your professional qualifications?

A. I have. It is Exh. RJR-2

Q. Please summarize your testimony.

A. My testimony will discuss the outage to the Colstrip Steam Generating Station Units 3 & 4 that occurred in the summer of 2018, which led to reduced output from the facility. Additionally, I will outline the steps taken to remedy the situation and bring the plant back to normal operational status.

II. BACKGROUND

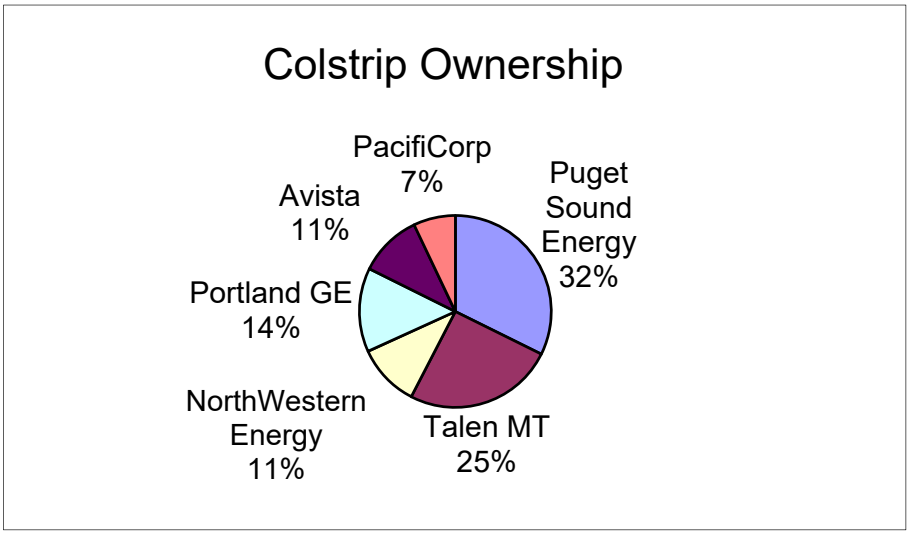
Q. Please describe Colstrip Steam Electric Generating Station

A. Colstrip consists of four generating units, Units 1 & 2, and Units 3 & 4. Units 1 & 2 are comprised of two coal-fired steam electric plant units located in eastern Montana about 120 miles southeast of Billings, Montana. Units 1 & 2 began operation in 1975 and 1976, respectively, and each unit produces up to 307 megawatts ("MW") net.

Units 3 & 4 consist of two coal fired steam plant units adjacent to Units 1 & 2. Construction of Units 3 & 4 began in 1979; Unit 3 began commercial operation in 1984 and Unit 4 followed with operations beginning in 1986. Each Unit can generate 740 MW of capacity.

Colstrip is a jointly owned facility, and the ownership is represented in Table 1, below. Talen Montana acts as the operator for Colstrip and makes day to day operational decisions with oversight from the ownership consortium.

Table 1



Q. Please explain the regulatory framework that applies to the 2018 summer outage at the Colstrip facility.

A. Colstrip is subject to the 40 C.F.R. Part 63, Subpart UUUUU – National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units, commonly referred to as the Mercury Air Toxics Standard ("MATS"). Compliance with MATS is administered by the Montana Department of Environmental Quality ("MDEQ"). Colstrip's emissions are measured by averaging the emissions of all four units at the facility for a 30-boiler operating day rolling average. The MDEQ approved of this compliance methodology in 2015. Under the facility's Title V operating permit, filterable particulate matter monitoring can be used as surrogate for non-Mercury metals.

Q. Please discuss the history of particulate matter testing at Colstrip.

A. The facility must maintain a rolling 30-day average of particulate matter emissions rate of 0.030 pound per million British Thermal Units ("lb/MMBtu"). That means the average emissions rate across all four units must be less than or equal to 0.030 lb/MMBtu. Any one or a combination of the units may individually test higher than 0.030, but averaged they must meet the 0.030 limit. Initial compliance at Colstrip was in September 2016, and until June 2018 Colstrip had maintained full compliance. In fact, compliance testing in fourth quarter of 2017 showed lower than normal results. There was elevation in the results for the first quarter of 2018; however, the facility remained in compliance. Investigation following the first quarter 2018 testing period showed no operational issues that would indicate further increases in particulate matter levels. The particulate matter readings at Colstrip have fluctuated over the years. For example, please see Exh. RJR-3 for Units 3 & 4 particulate matter test results from 2016 through August 2018 (column titled lb/mmBtu).

During second quarter 2018, Units 1 & 2 were offline, and because each unit ran under the 168-hour requirement for a quarterly test, they were not subject to MATS particulate matter testing. Unit 3 was tested on June 21, 2018, and those results indicated a particulate matter emission rate of 0.043 lb/MMBtu. Unit 4 completed a test on June 26, 2018, which resulted in a particulate matter level of 0.051 lb/MMBtu. These test results revealed that Colstrip was out of compliance with the particulate matter emissions limit. Talen MT notified MDEQ of the non-

compliant test results on June 28, 2018, in accordance with its Title V permit obligations.

Q. What actions were taken to mitigate the emissions and bring Colstrip back into compliance?

A. Talen MT removed Unit 3 from service on June 28 and kept it out of service until July 8; Unit 4 was shut down on June 29 and was kept offline until July 17. During that time, Talen MT staff reviewed compliance procedures, inspected boilers and controls and performed any necessary maintenance. The only way to determine compliance for particulate matter is to do stack testing during plant operations. Therefore, the units were returned to operational status to test for particulate matter levels, gather information, and evaluate the attempted corrective action

Talen MT marshalled both internal and external efforts to investigate and troubleshoot the elevated particulate matter deviation, focusing on the following four areas: 1) the compliance testing mechanism, 2) coal fuel quality, 3) boiler combustion, and 4) scrubber performance. None of the areas of investigation led to a specific cause; however, investigation revealed that portions of the scrubber system were not optimally balanced, even though they were within manufacturer specifications. This anomaly may have led to higher flue gas flow in certain areas. This could cause "carry over" of drops from the wet scrubber process, which may have contained solids, contributing to a high PM level. To remedy this issue, flow distribution plates were installed in the scrubbers.

After the flow distribution plates were installed, particulate matter levels for both units were in compliance. Specifically, Unit 4's emission levels were 0.021 lb/mmBtu on September 6, 2018, and Unit 3's levels were 0.024 lb./mmBtu on September 11, 2018.

Talen MT kept regular contact with the MDEQ and apprised them of actions being taken at the facility. During the period that the units were not compliant, they were only run for the purposes of gathering information, performing diagnostics, evaluating potential remedy action, and testing. From June 21, 2018 through September 5, 2018 the average capacity factor of Colstrip was 38 percent, compared to a more normal year that would see a capacity factor of around 92 percent.

Costs related to the investigation include external resources and capital expenditures, totaling approximately $3,002,000.

Q. What steps are being taken to avoid future MATS particulate matter emissions compliance violations?

A. Talen MT is working with MDEQ to determine appropriate penalties and compliance measures, which may include more frequent particulate matter testing or daily scrubber monitoring. Additionally, Talen MT is conducting a more in-depth analysis of the potential factors that caused the elevated particulate levels.

III. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.