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IDAHO PUBLIC UTILITIES COMMISSION

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)	CASE NO. AVU-E-17-01
OF AVISTA CORPORATION FOR THE)	CASE NO. AVU-G-17-01
AUTHORITY TO INCREASE ITS RATES)	
AND CHARGES FOR ELECTRIC AND)	
NATURAL GAS SERVICE TO ELECTRIC)	REBUTTAL TESTIMONY
AND NATURAL GAS CUSTOMERS IN THE)	OF
STATE OF IDAHO)	JASON R. THACKSTON
)	

FOR AVISTA CORPORATION

(ELECTRIC ONLY)

1 I. INTRODUCTION

2 **Q. Please state your name, employer and business**
3 **address.**

4 A. My name is Jason R. Thackston. I am employed as the
5 Senior Vice President of Energy Resources at Avista
6 Corporation, located at 1411 East Mission Avenue, Spokane,
7 Washington.

8 **Q. Have you filed direct testimony in this proceeding?**

9 A. No, I have not filed direct testimony in this
10 proceeding.

11 **Q. Would you briefly describe your educational and**
12 **professional background?**

13 A. Yes. I graduated from Whitworth University in 1992
14 with a Bachelor of Arts in International Studies and an emphasis
15 in Business Management and a Master of Business Administration
16 from Gonzaga University in 2000. I joined the Company in 1996
17 as a Corporate Treasury Analyst. I have held several different
18 positions at Avista, including roles in Finance and Accounting,
19 Internal Audit, Risk Management, Power Supply, and Gas Supply.
20 I was appointed Vice President of Finance in June 2009 and have
21 since held the roles of Vice President of Energy Delivery and
22 Vice President of Customer Solutions before assuming my current
23 role in January 2013. The Energy Resources group is primarily

1 responsible for producing or procuring the electricity and
2 natural gas to serve our customers' needs, including the
3 construction, operation, and maintenance of our generation
4 facilities and the optimization of those electric and natural
5 gas facilities for the benefit of our customers.

6 **Q. What is the scope of your testimony in this**
7 **proceeding?**

8 A. My testimony answers concerns and recommendations of
9 Sierra Club witness Dr. Hausman and reiterated by Idaho
10 Conservation League witness Mr. Otto related to the capital
11 expenditures for SmartBurn controls on Units 3 and 4 at
12 Colstrip. I further address Dr. Hausman's concerns about
13 Avista's exercise of its oversight relating to capital spending
14 at Colstrip, and the Colstrip depreciation schedule.

15 A table of contents for my testimony is as follows:

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21
22 **Q. Are you sponsoring any exhibits?**

23 A. No.

1 **II. SMARTBURN INVESTMENTS AT COLSTRIP**

2 **Q. What is SmartBurn?**

3 A. SmartBurn was originally developed as the part of
4 Alliant Energy's Combustion Initiative Program focused on the
5 reduction of nitrogen oxides ("NOx") by optimizing the
6 combustion process in coal-fired generation plants.¹ NOx is a
7 haze-inducing pollutant produced during the combustion of coal
8 that is regulated under the Regional Haze Rule. SmartBurn uses
9 air staging technology to reduce the amount of NOx that is
10 formed by reducing flame temperatures and improving the
11 efficiency of the combustion of coal. The NOx emissions data
12 received from Colstrip Units 3 and 4 after SmartBurn was
13 installed will be used to determine the appropriate size of the
14 technology needed to address the next expected step in NOx
15 reduction - Selective Catalytic Reduction, which is described
16 below.

17 **Q. What is Selective Catalytic Reduction?**

18 A. Selective Catalytic Reduction ("SCR") is a post-
19 combustion control technology based on the chemical reduction
20 of NOx into molecular nitrogen (N₂) and water vapor (H₂O). SCR
21 typically combines a catalyst with ammonia injection to
22 increase the NOx removal efficiency. The size, scope and amount

¹ <http://www.smartburn.com/background.php>

1 of ammonia used by the SCR is directly related to the amount of
2 NOx created during the earlier combustion process. Less NOx
3 produced during the combustion phase results in the need for a
4 smaller, and less costly SCR, and less chemicals to operate it.

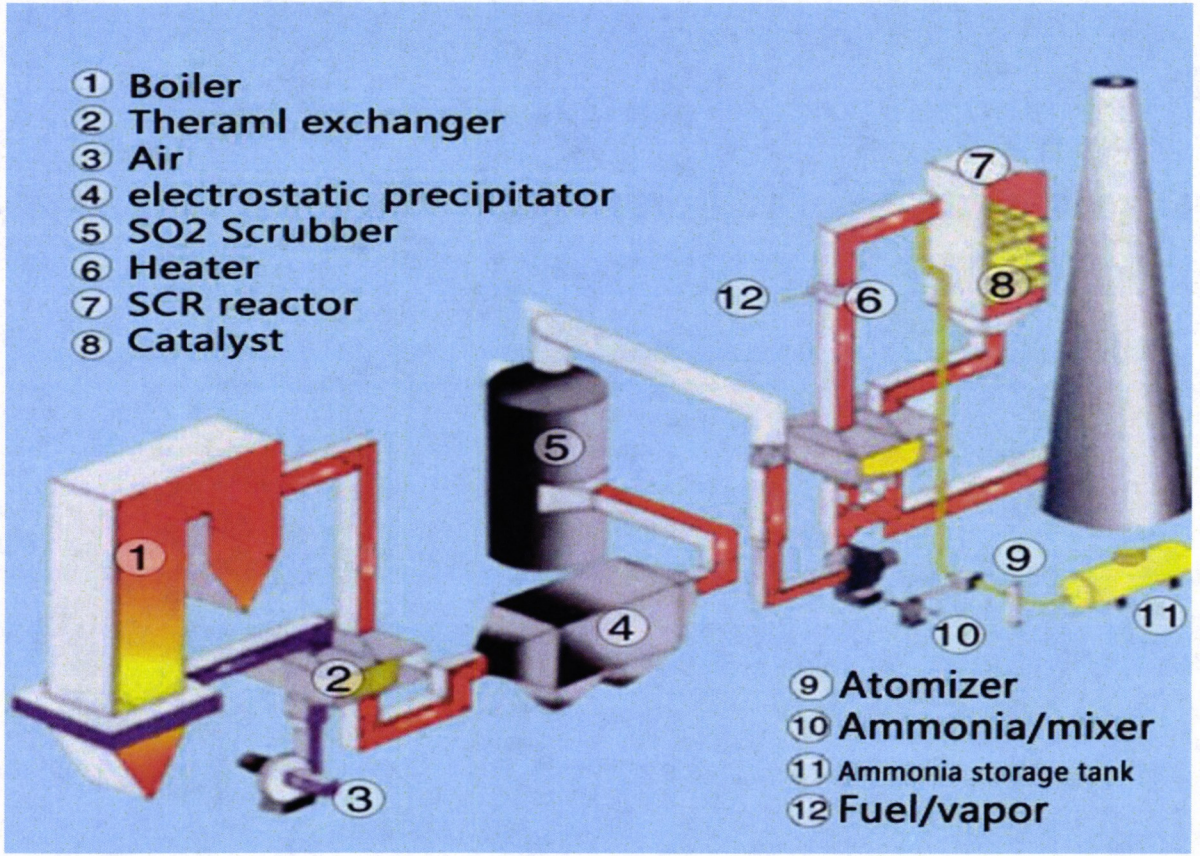
5 **Q. Can you provide a schematic showing where SmartBurn**
6 **and SCR would be located in the coal combustion process?**

7 A. Yes. Illustration No. 1 is a schematic showing where
8 SCR (Item No. 7) would be located in the combustion stream, as
9 opposed to the SmartBurn Technology which is deployed earlier
10 in the boiler (Item No. 1).² This schematic, however, differs
11 somewhat from the current configuration at Colstrip, which does
12 not have SCR (Item No. 7) or an electrostatic precipitator (Item
13 No. 4), but it serves to illustrate the point.

² <https://www.tilemachinery.com/production-technology/coal-fired-power-plant-scarselective-catalytic-reduction-honeycomb-denitrification-catalyst/>

1 **Illustration 1: Plant Schematic**

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15 The SmartBurn technology is applied to the boiler (#1 in
16 above illustration) in order to improve combustion, while the
17 SCR (#7 in above illustration) is employed at the end of the
18 combustion process to remove additional NO_x emissions.

19 **Q. How might SmartBurn impact the later addition of SCR?**

20 A. SmartBurn is not a replacement for SCR, but as
21 described above, it prevents some of the NO_x from even being
22 produced. The combination of SmartBurn, and associated
23 measured data, results in the need for a smaller and less

1 expensive SCR to limit the amount of NOx produced and to ensure
2 compliance with the Regional Haze Rule. A smaller SCR requires
3 less chemicals to operate, so a smaller amount of injected
4 ammonia is needed, resulting in lower future operating costs.

5 The SmartBurn technology saves future capital
6 expenditures, reduces future O&M expenditures, and provides an
7 earlier environmental benefit by reducing the production of
8 NOx. Using the SmartBurn technology before the installation of
9 SCR is analogous to making a home as energy efficient as
10 possible before adding solar panels, thereby reducing the
11 overall size of the solar array and lowering subsequent cost.
12 The energy efficiency investments do not eliminate the need for
13 the energy produced by solar panels, but it reduces that need
14 and results in a smaller number of panels needed to be
15 purchased, installed and maintained. Put differently, energy
16 efficiency should not be ignored altogether simply because it
17 does not meet 100 percent of needs.

18 **Q. Is there a specific date when NOx reduction**
19 **requirements will be made for Units 3 and 4 requiring**
20 **installation of SCR?**

21 A. There is not a specific date requiring SCR on Colstrip
22 Units 3 and 4 at this time because of the nature of the
23 regulatory program governing NOx emissions. The Regional Haze

1 Program is a somewhat unique regulatory approach in comparison
2 to the typical environmental regulation where the emission
3 limitations and timelines are established at issuance.
4 Regional Haze sets a goal of zero in 2064 and uses a "glide
5 path" and reasonable progress goals to define the compliance
6 trajectory. The program uncertainty created by changing
7 administrations and policy disputes concerning Federal
8 oversight with State implementation, and various litigation
9 decisions results in anything but a clear roadmap. However,
10 there are expectations about the timing of SCR requirements on
11 Units 3 and 4 that are discussed later in my testimony.

12 **Q. Do you agree with the assertions of The Sierra Club's**
13 **witness Dr. Hausman regarding the installation of SmartBurn on**
14 **Colstrip Units 3 and 4?**

15 A. No. Dr. Hausman argues³ that the capital expenditures
16 for installing SmartBurn controls to reduce nitrogen oxides
17 ("NOx") on Colstrip Units 3 and 4 were "wasteful" and
18 "imprudent".⁴ He argues that this capital was not spent for
19 reliability or economic purposes.

20 SmartBurn does not otherwise improve reliability or extend
21 the life of the plant, so it has no bearing on the useful life

³ Direct Testimony of Ezra D. Hausman, pp. 6-35.

⁴ Id. p. 5.

1 of the plant or the Colstrip owner's decision to operate the
2 plant. What it does do is provide immediate environmental
3 benefits through NOx reduction now (as discussed later in my
4 testimony) and helps mitigate the cost of later SCR additions.

5 **Q. Please describe Avista's capital spending and revenue**
6 **requirements for the SmartBurn investment?**

7 A. Avista's total share of SmartBurn capital spending on
8 Units 3 and 4 was \$3,040,933. The Idaho share of this capital
9 spending is \$1,044,121. This includes \$685,171 (revenue
10 requirement of \$73,635) that was previously included in Case
11 No. AVA-E-16-03, and \$358,950 (revenue requirement of \$38,682)
12 in this case. Company witness Ms. Andrews provides additional
13 details about the SmartBurn capital costs and the associated
14 revenue requirements.

15 **Q. Could you please provide additional background about**
16 **when and why SmartBurn technology was installed on Colstrip**
17 **Units 3 and 4?**

18 A. Yes. In the 2012 decision timeframe, SCRs were being
19 ordered in many surrounding states and the Sierra Club was also
20 in litigation against Colstrip to require SCR for alleged "New
21 Source Review" violations.⁵ The owners, therefore, proactively

⁵ State of Montana Regional Haze Progress Report, August 2017, Montana Department of Environmental Quality, page 2-8 to 2-10.

1 decided to install SmartBurn in an effort to manage a future
2 regulatory obligation, doing so in a strategic and cost-
3 effective manner. Furthermore, SmartBurn was the last
4 available, low cost, NOx pollution prevention emission control
5 prior to the expected installation of a very expensive emission
6 control (e.g., SCR).

7 **Q. What was known about NOx emissions requirements for**
8 **Colstrip Units 3 and 4 when the decision to install SmartBurn**
9 **was made in 2012?**

10 A. There was a continuing expectation that future
11 additional NOx reductions would be required for Colstrip Units
12 3 and 4. Avista's 2013 Electric IRP estimated SCR installation
13 on Colstrip Units 3 and 4 could be required in 2027, and the
14 Company ran scenarios to understand the implications of the SCR
15 investment at that time. This was based on the Federal
16 Implementation Plan for the State of Montana, finalized on
17 September 18, 2012, and the expectation of a Reasonable Progress
18 Report in September 2017.

19 **Q. Since 2012, what additional requirements associated**
20 **with NOx emissions reductions for Colstrip Units 3 and 4 have**
21 **the Company evaluated?**

22 Significant amounts of covered emissions in the attainment
23 area that includes Colstrip have also been changing. For

1 example, the attainment area for Colstrip was impacted by the
2 closure of the J.E. Corette Coal Plant in 2015 and will be
3 further impacted by the closure of Colstrip Units 1 and 2 by
4 July 2022.

5 As stated in the Company's 2015 Electric IRP "... modeling
6 assumes that a default control system of a selective catalytic
7 reduction (SCR) will be required by the end of 2026, but the
8 specific target date or control type is unknown at this time."⁶
9 Avista's 2017 Electric IRP also plans for SCR on Colstrip Units
10 3 and 4 in 2028.

11 **Q. Did the owners of Colstrip expect SmartBurn to**
12 **satisfy all future NOx emission reductions on Colstrip Units 3**
13 **and 4?**

14 A. No. The SmartBurn technology reduced the first
15 increment of NOx in the most cost-effective way, based on a
16 review of the technology and the relatively low capital cost to
17 install. Also, the use of SmartBurn technology was determined
18 to be an integral part of any projected future control
19 technology for Colstrip Units 3 and 4. SmartBurn reduces a
20 significant amount of the target NOx reduction for a
21 significantly lower cost than a full control modification
22 approach. The early installation of SmartBurn also provides

⁶ Kinney Exhibit No. 4, p. 12-4.

1 several years of operational boiler data that allows for the
2 design and eventual installation of the appropriately sized SCR
3 or other control technology. SmartBurn also provides an
4 additional tool to maintain NOx emissions within the current
5 operating requirements, as the plant ramps more frequently to
6 support an increasing amount of variable generation in the
7 region.

8 **Q. Were there other benefits for the timing of**
9 **installing SmartBurn?**

10 A. Yes. The SmartBurn technology was installed on Units
11 3 and 4 during previously scheduled outages thereby reducing
12 implementation costs. If the SmartBurn needed to be added at
13 a later date for more near-term compliance needs, a separate
14 outage might be required in consecutive years - the first outage
15 to install the SmartBurn technology, and a second outage to
16 install additional plant controls. Depending on market
17 conditions at the time of the outage, the additional cost of an
18 extra week long outage could be approximately one half the cost
19 of installing SmartBurn itself. Finally, the operational
20 effectiveness of SmartBurn may allow for a different and more
21 cost-effective technology to be installed in place of SCR,
22 because a lower amount of NOx is being produced by the plant.

1 **Q. Did the Colstrip owners' installation of SmartBurn**
2 **result in verifiable NOx reductions?**

3 A. Yes. The installation of SmartBurn has met the
4 guaranteed emission rate reduction specified in the contract
5 for this capital investment. The addition of SmartBurn on Units
6 3 and 4 improved NOx removal from 80 percent to approximately
7 86 percent, or a 6 percent improvement.

8 **Q. Has the Sierra Club taken issue with the installation**
9 **of SmartBurn on Units 3 and 4 in other regulatory venues?**

10 A. No. The Sierra Club intervened in the most recent
11 general rate case for Puget Sound Energy (PSE) before the
12 Washington Utilities and Transportation Commission ("WUTC") in
13 Docket No. UE-170033. Dr. Hausman also provided testimony in
14 that case and does not take issue with the installation of
15 SmartBurn on Colstrip Units 3 and 4 in his 41 pages of testimony
16 in that case, even though PSE has a larger ownership share at
17 25 percent of both units and a larger associated cost for
18 SmartBurn on those units. He admits in his testimony in that
19 case (Docket No. UE-170033) that selective catalytic reduction
20 or SCR will probably be required on Units 3 and 4 in the mid-
21 2020s.⁷ Another witness for the Sierra Club in that same case,
22 Mr. Douglas Howell, also fails to make any mention of SmartBurn

⁷ Exh. EDH-1T

1 or subsequent complaints about its application to Units 3 and
2 4 of Colstrip. There is no mention in the Sierra Club's
3 testimony in this Avista proceeding explaining why it was
4 acceptable to them for PSE to spend capital on SmartBurn for
5 Units 3 and 4, but why they now take issue with Avista including
6 these costs.

7 **Q. Do you have any other comments concerning the Sierra**
8 **Club's characterization of SmartBurn on Units 3 and 4?**

9 A. Yes. It is ironic that the Sierra Club, as an
10 environmental steward, takes issue with an investment in
11 SmartBurn technology that has actually improved NOx emissions.
12 Dr. Hausman's testimony in this case characterizes SmartBurn
13 spending as "wasteful" (Page 5) and "discretionary" (Page 12)
14 even though it reduces pollutants at Colstrip. This is ironic,
15 given that the Sierra Club has argued with the Environmental
16 Protection Agency that it had not gone far enough in its Federal
17 Implementation Plan for the Regional Haze Program in the State
18 of Montana and has been arguing for earlier dates for the
19 requirement of SCR on Units 3 and 4 in modeling for Avista's
20 Electric IRP. But now they argue against lower emissions.

21 **Q. Can you please summarize your testimony concerning**
22 **the SmartBurn investment in Units 3 and 4?**

1 A. Yes. Avista agreed to invest in SmartBurn technology
2 on Colstrip Units 3 and 4 for the following reasons:

3 1. The decision to install SmartBurn was made in 2012 for
4 installation in 2016 and 2017. At the time the decision
5 to install was made, it was believed by the Company,
6 and even by the Sierra Club, that SCR would be required
7 on Units 3 and 4 in the 2020s.

8 2. Avista's share of the capital costs for Idaho was
9 \$1,044,121; not the \$3,040,933 represented by the Sierra
10 Club which included Avista's combined Idaho and
11 Washington SmartBurn capital costs. Of the \$1,044,121
12 in capital costs, \$685,171 of SmartBurn capital
13 investments are already reflected in rates previously
14 approved; only \$358,950 of remaining investment is at
15 issue in this case (i.e., a \$38,682 revenue
16 requirement).

17 3. SmartBurn will not extend the useful life, or even the
18 reliability of Units 3 and 4, contrary to the Sierra
19 Club's concerns.

20 4. SmartBurn, in fact, has produced positive environmental
21 results, lowering NOx emissions and providing data
22 useful for designing and selecting the SCR for the next
23 step in NOx reductions expected in 2028.

1 III. MANAGEMENT OF COLSTRIP CAPITAL

2 Q. Do you agree with the Sierra Club's⁸ assertion that
3 the Company is not actively exercising its ownership interests
4 concerning capital spending at Colstrip?

5 A. No. While it is true that the ownership structure
6 and operating agreement for Colstrip do not provide a line item
7 veto of individual capital projects, and Avista has a small
8 enough ownership interest preventing it from stopping capital
9 projects, the Company nevertheless actively exercises its
10 ownership rights while projects are being discussed. Each year
11 Talen proposes a set of capital projects for Units 3 and 4, as
12 well as for the plant in common. These projects are reviewed by
13 one or more Avista representatives on an individual basis and
14 also as an ownership group. Additionally, Avista and other
15 Company representatives meet with Talen at least every other
16 month to review plant operations including capital projects.
17 Projects may be added or subtracted throughout the year as
18 appropriate.

19 It should also be remembered that the compensation
20 structure for the plant operator is cost based and does not
21 include a rate of return based on the capital spending at the
22 plant and there is no incentive to spend foolishly. In fact,

⁸ Direct Testimony of Ezra D. Hausman, p.34.

1 quite the opposite is true. The plant operator is an independent
2 power producer that relies on low plant costs to ensure the
3 plant is competitive in the market so there is no financial
4 incentive for them to spend needless capital. The plant
5 operator's financial interests to keep costs as low as possible
6 while meeting all regulations are the same as all of the
7 Colstrip owners and their customers.

8 **Q. How do the owners of Colstrip address regulatory**
9 **and environmental compliance obligations?**

10 A. The owner's group does not approach its regulatory
11 and environmental compliance obligations through the narrow
12 perspective described by the Sierra Club and Idaho Conservation
13 League in their testimony. The owners group, and specifically
14 Avista, must always strategically manage the risk to both our
15 customers and shareholders for the known and possible
16 regulatory obligations at both the federal and state levels,
17 while managing reliability and cost of all of our generating
18 resources. The owners do not take this responsibility lightly
19 and exercise careful diligence in gathering information at the
20 point in time when strategic decisions must be made.

1 IV. COLSTRIP DEPRECIATION SCHEDULE

2 Q. Does the Company agree with the assertion that the
3 depreciation schedule for Colstrip Units 3 and 4 needs to be
4 shortened to 2027?⁹

5 A. No, the Company's current depreciation study for
6 Colstrip goes out to 2034-2036. Ms. Andrews, in her rebuttal
7 testimony, discusses the new study, expected to be completed in
8 the first quarter of 2018, and the results are not expected to
9 change this date based on preliminary discussions with the
10 consultant performing the study. The shortened period
11 discussed by Dr. Hausman of the Sierra Club¹⁰ appears to be
12 based on a negotiated settlement with Puget Sound Energy (WUTC
13 Docket No. UE-170033) regarding the depreciation period for
14 that company's 25 percent ownership interest in Colstrip Units
15 3 and 4. That settlement has not been approved by the WUTC yet
16 and the date is otherwise not supported by a depreciation study.
17 The depreciation schedule for Avista is not otherwise an issue
18 in this case. The appropriate place to raise those concerns
19 about accelerating the depreciation schedule for Colstrip
20 should occur in the regulatory filing for the updated Colstrip
21 depreciation schedule.

⁹ Direct Testimony of Ezra D. Hausman, p. 42.

¹⁰ Ibid.

1 Q. Does this conclude your rebuttal testimony?

2 A. Yes, it does.