

Exhibit No. RTL-15CT
Docket UE-152253
Witness: Rick T. Link

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,

Complainant,

v.

PACIFIC POWER & LIGHT
COMPANY,

Respondent.

DOCKET UE-152253

PACIFIC POWER & LIGHT COMPANY

**REDACTED SUPPLEMENTAL REBUTTAL TESTIMONY OF
RICK T. LINK**

May 2016

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ATTACHED EXHIBITS

Exhibit No. RTL-16—Staff’s Response to Pacific Power Data Request No. 47

1 **Q. Are you the same Rick T. Link who submitted direct and rebuttal testimony in**
2 **this case on behalf of Pacific Power & Light Company (Pacific Power or**
3 **Company), a division of PacifiCorp?**

4 A. Yes.

5 **PURPOSE AND SUMMARY OF TESTIMONY**

6 **Q. What is the purpose of your supplemental rebuttal testimony?**

7 A. I respond to the supplemental testimony filed by Mr. Jeremy B. Twitchell on behalf
8 of Staff of the Washington Utilities and Transportation Commission (Commission)
9 related to the prudence of the Company's decision to install selective catalytic
10 reduction systems (SCRs) on Units 3 and 4 of the Jim Bridger generating plant (Jim
11 Bridger Units 3 and 4). I specifically address Staff's assertions that the Company
12 issued the full notice to proceed (FNTP) to the engineering, procurement, and
13 construction services (EPC) contractor based on outdated analysis.¹

14 **Q. Please summarize your supplemental rebuttal testimony.**

15 A. My supplemental rebuttal testimony explains how the Company considered changing
16 market conditions in its economic analysis before issuing the FNTP to the EPC
17 contractor on December 1, 2013. Contrary to Staff's claims that the Company issued
18 the FNTP based on outdated analysis, I explain that the Company used its
19 comprehensive SCR analysis to assess changes in the base case natural gas price
20 forecasts and EPC contract costs, while considering natural gas price forecast
21 uncertainty, Bridger Coal Company (BCC) mine cost updates, and then-current
22 carbon dioxide (CO₂) emission price assumptions before issuing the FNTP. My

¹ Twitchell, Exh. No. JBT-28HCT 1:23-2:2.

1 supplemental rebuttal testimony further explains that third-party natural gas price
2 information received between December 1, 2013, and January 1, 2014, supports the
3 Company's decision to issue the FNTP and to proceed with installation of SCRs as
4 the least-cost, least-risk Regional Haze compliance alternative for Jim Bridger Units 3
5 and 4.

6 THE COMPANY'S ANALYSIS

7 **Q. Did the Company consider the impact of changing market conditions on its Jim
8 Bridger SCR analysis before issuing the FNTP on December 1, 2013?**

9 A. Yes.

10 **Q. Please explain.**

11 A. The Company performed extensive financial analysis of Regional Haze compliance
12 alternatives for Jim Bridger Units 3 and 4 using a robust methodology that considers
13 risk and uncertainty. This analysis was designed to allow for rapid re-assessment of
14 the present value revenue requirement differential (PVRR(d)) between the SCR and
15 natural gas conversion compliance alternatives with changing market conditions,
16 complementing flexibility provisions that the Company negotiated in the EPC
17 contract. The Company used this analysis when choosing installation of SCRs as the
18 best Regional Haze compliance alternative in May 2013 *and* to assess how changes in
19 market conditions affected the customer benefits before issuing the FNTP in
20 December 2013. The Company's analysis in this case is comprehensive, accurate,
21 and shows that Regional Haze compliance for Jim Bridger Units 3 and 4 can be met
22 most economically with installation of SCRs.

23 **Q. Do you agree with Staff's claim that the Company issued the FNTP based on**

1 **outdated analysis?**

2 A. No.

3 **Q. What types of changes in market conditions did the Company consider before**
4 **issuing the FNTF?**

5 A. The Company considered all factors material to its SCR analysis, recognizing that the
6 base case natural gas price forecast had fallen, the estimated cost for the EPC contract
7 had been reduced, BCC mine costs had been updated to support the Company's ten-
8 year business plan, and there was no reason to change CO₂ price assumptions after
9 the June 2013 issuance of the Presidential Memorandum on carbon emissions.

10 **Q. Did the Company's consideration of changing market conditions before issuing**
11 **the FNTF respond to the Commission's direction in its acknowledgment letter**
12 **for the 2013 Integrated Resource Plan (IRP), dated November 25, 2013?**

13 A. Yes. In its IRP acknowledgement letter, the Commission directed the Company to
14 update its analysis of coal-related investments, which included the Jim Bridger SCRs.
15 The Company conducted this review and update before issuing the FNTF and
16 memorialized its analysis in the 2013 IRP Update, filed on March 31, 2014.

17 **Q. Please explain how the Company considered the impact of a reduced natural gas**
18 **price forecast on the SCR benefits before issuing the FNTF.**

19 A. As I stated above, the Company performed comprehensive analysis of the Jim
20 Bridger Units 3 and 4 Regional Haze compliance alternatives. As part of this
21 analysis, the Company produced natural gas price sensitivities that show a strong
22 linear relationship between natural gas price inputs and the PVR(d) between the
23 SCR and natural gas conversion Regional Haze compliance alternatives. I present

1 this relationship in my direct testimony as Exhibit No. RTL-9C.²

2 Based upon this relationship, the Company's comprehensive analysis was
3 used to establish how the SCR benefits are affected by natural gas price assumptions.
4 Before issuing the FNTP, the Company reviewed its most recent official forward
5 price curve (OFPC), and using the relationship shown in Exhibit No. RTL-9C, readily
6 determined that the base case PVRR(d) continued to show significant SCR benefits
7 (██████████).³

8 When evaluating natural gas prices before issuing the FNTP, the Company
9 also considered that there is uncertainty in long-term natural gas price forecasts. Staff
10 testifies that natural gas prices were falling over the period December 2011 through
11 December 2013 and that this powerful trend should have caused the Company to
12 change course.⁴ The Company was aware that natural gas prices had fallen and
13 considered this in its FNTP decision-making process. The Company was also aware
14 that there is volatility in long-term price forecasts, that natural gas prices cannot trend
15 downward indefinitely, and that there was a reasonable possibility that actual natural
16 gas prices could be higher than then-current base case projections.

17 **Q. Please explain how the Company considered the impact of reduced EPC**
18 **contract costs on the SCR benefits before issuing the FNTP.**

19 A. As stated in my rebuttal testimony, the Company was aware, before issuing the
20 FNTP, that EPC costs for the Jim Bridger SCRs had been reduced by ██████████.⁵
21 The reduced EPC cost contributes approximately ██████████ in additional benefits

² Link, Exh. No. RTL-1CT 19:14-20.

³ *Id.*, 20:18-21.

⁴ Twitchell, Exh. No. JBT-28HCT 27:4-13.

⁵ Link, Exh. No. RTL-11CT 27:10-15.

1 to the SCR compliance alternative. These incremental benefits, tied to fixed costs for
2 the SCRs, are easily calculated and no model runs are required to understand how
3 reduced EPC costs improve benefits for the SCR compliance alternative. Before
4 issuing the FNTTP, the Company knew that these EPC cost reductions would only add
5 to the already substantial benefits of the SCR compliance alternative even after
6 accounting for reduced base case natural gas price assumptions. Moreover, as Mr.
7 Teply testifies, there would be increased costs and risks of natural gas conversion
8 under a hypothetical post-FNTTP cancellation.

9 **Q. Please explain how the Company considered the impact of updated BCC mine**
10 **costs before issuing the FNTTP.**

11 A. As described in Mr. Dana Ralston's testimony and the supplemental rebuttal
12 testimony of Ms. Cindy A. Crane, in October 2013, the Company updated its BCC
13 mine costs to support its ten-year business plan. But the only complete life-of-mine
14 or long-term fueling plan for the Jim Bridger generating plant when the FNTTP was
15 issued was the January 2013 long-term fueling plan. As Ms. Crane testifies, Staff's
16 attempt to produce a long-term fueling plan for the Jim Bridger generating plant from
17 BCC coal costs prepared by the Company in fall 2013 as part of its annual budgeting
18 process (the October 2013 mine plan) relies on extrapolation and use of incorrect
19 assumptions.

20 At the time the FNTTP was issued, the Company was aware that the base case
21 SCR compliance alternative was approximately [REDACTED] ([REDACTED]
22 PVRR(d) based on the September 2013 OFPC plus [REDACTED] for EPC cost
23 savings) lower cost than the natural gas conversion alternative. While the Company

1 was aware that its BCC mine costs had been updated before issuing the FNTP, there
2 was nothing in the updated mine cost projections—an interim step to developing a
3 new long-term fueling plan for the Jim Bridger generating plant, which was
4 completed in November 2014 and used in the 2015 IRP—to suggest delivered coal
5 costs were increasing to a level that would eliminate the substantial SCR benefits. In
6 fact, this observation was later substantiated when the long-term fueling plan for the
7 Jim Bridger generating plant used in the 2015 IRP was completed. As stated in my
8 rebuttal testimony, when coal costs for the Jim Bridger generating plant used in the
9 Company’s SCR analysis are compared to coal costs used in the 2015 IRP, SCR
10 benefits would be reduced by only [REDACTED].⁶ Ms. Crane’s supplemental rebuttal
11 testimony notes that this estimate is conservative because it assumes the percentage
12 increase to coal costs for a two-unit operating scenario (the gas conversion
13 alternative) is the same as the four-unit operating scenario (the SCR alternative).

14 **DECEMBER 2013 NATURAL GAS PRICES**

15 **Q. In its supplemental testimony, did Staff change its position on the natural gas**
16 **price information the Company should have considered before issuing the**
17 **FNTP?**

18 A. Yes.

19 **Q. Is this testimony outside the scope of the supplemental testimony Staff was**
20 **permitted to file in this case under Order 08?**

21 A. Yes, that is my understanding. Staff requested permission to file supplemental
22 testimony related to the October 2013 mine plan, which the Administrative Law

⁶ *Id.*, 10:12-15

1 Judge granted in Order 08. Staff did not seek or receive authorization to file
2 supplemental testimony to change its position on the applicable forward price curve.
3 Staff states that it changed its position after it became aware, “based on new
4 information provided by the Company in its rebuttal case and subsequent discovery,”
5 that the Company “came into new information regarding natural gas price forecast
6 between October and December 2013[.]”⁷

7 **Q. Is Staff’s justification valid?**

8 A. No. In a data request issued May 9, 2016, the Company asked Staff to provide
9 citations to the “new information” that Staff received in rebuttal testimony and
10 subsequent discovery. Staff’s response to that request is attached as Exhibit No.
11 RTL-16. Of the 28 citations provided by Staff in its response, only two citations
12 relate to natural gas price forecasts.⁸ These two citations refer to portions of my
13 rebuttal testimony describing Staff’s assessment of the Company’s September 2013
14 OFPC and the long-term natural gas forecasts available to the Company when it
15 developed the December 2013 OFPC. Of the information provided in these citations,
16 only the [REDACTED] long-term forecast was new to Staff. All other information was
17 provided in response to Staff Data Request 92, in which, as detailed in the Company’s
18 response to Bench Request 6, the Company provided forward natural gas curves used
19 to develop its 2012 and 2013 OFPCs.⁹ This information was provided to Staff
20 February 10, 2016, over a month before it filed testimony on March 17, 2016. The
21 [REDACTED] price forecast, issued in November 2013, was not included in the response to

⁷ Twitchell, Exh. No. JBT-28HCT 26:8-11.

⁸ The citations are to Exhibit No. RTL-11CT 13:6-7, 18:3-14.

⁹ A copy of this response is attached as Exhibit No. JIF-10 to the confidential testimony of Sierra Club witness Dr. Jeremy I. Fisher.

1 Staff Data Request 92 because the Company did not use it in developing the
2 December 2013 OFPC.

3 **Q. Please explain Staff's change of position on the applicable forward price curve.**

4 A. In its initial testimony, Staff testified that the most relevant natural gas price forecasts
5 were those available when the Company developed its September 2013 OFPC
6 because the Company "should only be held accountable to act on the information that
7 was in its possession" at that time.¹⁰ Staff calculated its own natural gas price
8 assumptions based on information Pacific Power received from its third-party
9 providers that it believed were available when the Company developed its September
10 2013 OFPC. Because Staff's calculation improperly combined real and nominal
11 forecasts and inappropriately used a forecast that was produced after the Company
12 issued its September 2013 OFPC, Staff's proposed natural gas price assumption was
13 understated. Once corrected, Staff's proposed forward price curve *increased* the
14 benefits of the Bridger SCRs by [REDACTED].¹¹

15 In its supplemental testimony, Staff now testifies that the Company had new
16 natural gas price information between October and December 2013 that significantly
17 improved the cost-effectiveness of natural gas conversion, which should have been
18 considered before issuing the FNTP.¹² Based on this rationale, Staff argues the
19 Company's December 2013 OFPC, issued in early January 2014, more than one
20 month after the FNTP was issued, should have been considered.

21 **Q. Was Staff aware that the Company had received updated natural gas price**

¹⁰ Twitchell, Exh. No. JBT-1CT 53: 5-8; 52:9-11; Exh. No. RTL-12C (WUTC Staff's Response to Pacific Power's Data Request No. 4).

¹¹ Link, Exh. RTL-11CT 13-14.

¹² Twitchell, Exh. No JBT-28HCT 26:4-11.

1 **forecasts between October and December 2013 when it prepared its original**
2 **testimony in this case?**

3 A. Yes. As mentioned above and as detailed in the Company's response to Bench
4 Request 6, the Company provided forward natural gas curves used to develop its
5 December 2013 OFPC in response to Staff Data Request 92 dated February 10,
6 2016.¹³

7 **Q. Do you agree with Staff's changed position?**

8 A. No. As stated in my direct and rebuttal testimony, the most current OFPC available
9 to the Company at the time the FNTF was issued was the September 2013 OFPC. As
10 discussed above, the Company considered the impact of natural gas prices from the
11 September 2013 OFPC on its base case analysis. The Company also considered that
12 there is volatility in long-term price forecasts, recognizing that actual natural gas
13 prices will differ from any forecast regardless of when the forecast is issued. Simply
14 stated, the Company assessed the most current information available before issuing
15 the FNTF.

16 **Q. What additional third-party natural gas price information was available to the**
17 **Company after it issued the FNTF?**

18 A. In my rebuttal testimony, I explain that the Company received updated natural gas
19 price forecasts from [REDACTED] on October 22, 2013; an updated forecast from
20 [REDACTED] on November 20, 2013; and an updated forecast from [REDACTED] on December 11,
21 2013. The only forecast that was received by the Company *after* the FNTF was

¹³ A copy of this response is attached as Exhibit No. JIF-10 to the confidential testimony of Sierra Club witness Dr. Jeremy I. Fisher.

1 issued was the [REDACTED] forecast.¹⁴

2 **Q. Have you calculated the PVRR(d) between the SCR and natural gas conversion**
3 **alternatives based on the natural gas price forecasted provided by PIRA in**
4 **December 2013?**

5 A. Yes. As stated in my rebuttal testimony, the nominal levelized price calculated from
6 PIRA's December 2013 natural gas price forecast is [REDACTED]/mmBtu.¹⁵ Using the same
7 relationship between nominal levelized natural gas prices and PVRR(d) results that is
8 presented in Exhibit RTL-9C, application of the [REDACTED] natural gas price forecast
9 yields a PVRR(d) that is [REDACTED] favorable to installation of SCRs *before*
10 accounting for known EPC cost reductions. Adding in the EPC cost reductions that
11 were known by December 2013 improves the PVRR(d) benefit of SCRs to

12 [REDACTED].

13 **Q. Are you suggesting the Company should have based its decision to issue the**
14 **FNTP based on individual consultant forecasts as opposed to its own OFPC?**

15 A. No. I am simply highlighting that the only new information available to the
16 Company after it issued its FNTP on December 1, 2013, was a third-party forecast
17 issued on December 11, 2013. If this forecast is applied to the relationship in Exhibit
18 No. RTL-9C, the PVRR(d) results are even higher than those based on the
19 Company's September 2013 OFPC. The Company reasonably used the September
20 2013 OFPC and appropriately considered natural gas forecast volatility before issuing
21 the FNTP on December 1, 2013.

¹⁴ Link, Exh. No. RTL-11CT 18:3-9.

¹⁵ *Id.*, 18:10-12.

1 **CONCLUSION**

2 **Q. What is your recommendation to the Commission?**

3 A. The Company's analysis supporting its decision to install SCRs on Jim Bridger
4 Units 3 and 4 is comprehensive and clearly demonstrates customer benefits as
5 compared to natural gas conversion. The Company reasonably updated its analysis
6 based on changing market conditions before issuing the FNTP. When considering
7 changes to market conditions, the Company re-affirmed that installation of SCRs is
8 the least-cost, least-risk compliance alternative for meeting Regional Haze obligations
9 for Jim Bridger Units 3 and 4. I recommend the Commission determine the
10 Company's decision to install SCRs on Jim Bridger Units 3 and 4 was prudent.

11 **Q. Does this conclude your supplemental rebuttal testimony?**

12 A. Yes.