

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

**IN THE MATTER OF PUBLIC SERVICE)
COMPANY OF NEW MEXICO'S)
ABANDONMENT OF SAN JUAN)
GENERATING STATION UNITS 1 AND 4)**

Case No. 19-00018-UT

REBUTTAL TESTIMONY

OF

THOMAS G. FALLGREN

November 15, 2019

**NMPRC CASE NO. 19-00018-UT
INDEX TO THE REBUTTAL TESTIMONY OF
THOMAS G. FALLGREN**

**WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO**

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AFFIDAVIT

**REBUTTAL TESTIMONY
OF THOMAS G. FALLGREN
NMPRC CASE NO. 19-00018-UT**

1

I. INTRODUCTION

2 **Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.**

3 **A.** My name is Thomas G. Fallgren. I am the Vice President of PNM Generation.
4 My address is Public Service Company of New Mexico, 2401 Aztec Rd, NE,
5 Albuquerque, New Mexico 87107.

6

7 **Q. HAVE YOU FILED PRIOR TESTIMONY IN THIS PROCEEDING?**

8 **A.** Yes. I filed Direct Testimony in support of PNM's Application on July 1, 2019. I
9 also filed Supplemental and Direct Errata Testimony on September 20, 2019.

10

11 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

12 **A.** The purpose of my rebuttal testimony is to respond to the claim by New Energy
13 Economy ("NEE") in the Direct Testimony of NEE Witness Grubb that PNM had
14 decided to abandon the San Juan coal plant in December 2018. I also address the
15 contention by the Utility Division Staff ("Staff") that PNM failed to properly
16 consider and evaluate whether retrofitting the San Juan coal plant with Carbon
17 Capture Utilization and Sequestration ("CCUS") technology is a feasible and low
18 cost alternative to abandonment. Finally, I address NEE's generic concerns with
19 environmental impacts from operations at the San Juan coal plant.

20

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**II. RESPONSE TO NEE WITNESS GRUBB REGARDING SAN JUAN
ABANDONMENT DECISION**

**Q. DO YOU AGREE WITH NEE WITNESS GRUBB THAT PNM MADE AN
IRREVOCABLE DECISION IN DECEMBER 2018 TO ABANDON THE
SAN JUAN COAL PLANT UNITS 1 AND 4?**

A. No. As stated in my previous testimony, and detailed below, PNM has not made any irrevocable decision with regard to the abandonment of the San Juan coal plant. NEE Witness Grubb erroneously relies on the Compliance Filing made by PNM in Case No. 13-00390-UT in December 2018 to support her claim. However, PNM had not made an irrevocable decision to abandon Units 1 and 4 of the San Juan coal plant in December 2018 and has been clear that PNM’s decision is subject to the New Mexico Public Regulation Commission (“NMPRC”) approving abandonment of the San Juan coal plant at the conclusion of this case.

**Q. WHAT WAS THE PURPOSE OF THE DECEMBER 2018 COMPLIANCE
FILING IN CASE NO. 13-00390-UT?**

A. Section 19 of the Modified Stipulation in Case No 13-00390-UT required that “PNM shall make a filing with the Commission ... to determine the extent to which SJGS should continue serving PNM’s retail customers’ needs after June 30, 2022.” The December 2018 compliance filing was made in conformity with the Modified Stipulation.

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1 **Q. DID THE MODIFIED STIPULATION IN CASE NO. 13-00390-UT**
2 **REQUIRE PNM TO MAKE AN ABANDONMENT FILING FOR THE**
3 **SAN JUAN COAL PLANT?**

4 **A.** No, quite the opposite. The intention of the Modified Stipulation was to allow
5 parties to Case No. 13-00390-UT the ability to review modeling inputs,
6 assumptions, and constraints and perform a reasonable number of modeling runs
7 “...before PNM has made a binding commitment to a post 2022 coal supply
8 agreement to keep the plant running past June 2022.” The purpose of the
9 compliance filing was to inform the parties to Case No. 13-00390-UT that PNM
10 did not intend to make any binding commitment for coal supply beyond 2022
11 which PNM believed obviated the need for any formal hearing. PNM stated in its
12 Compliance Filing that it planned to file a future case for the abandonment of the
13 San Juan coal plant.

14
15 **Q. WHEN DID PNM FIRST IDENTIFY THAT ABANDONMENT OF THE**
16 **SAN JUAN COAL PLANT WOULD RESULT IN CUSTOMER SAVINGS?**

17 **A.** As part of PNM’s key findings in its 2017 Integrated Resource Plan (“2017 IRP”),
18 PNM stated that “retiring PNM’s 497 MW share of SJGS in 2022 would provide
19 long term cost savings for PNM’s customers”. The 2017 IRP was submitted on
20 July 3, 2017, and was finally accepted by the NMPRC in its Final Order issued on
21 December 19, 2018 in Case No 17-00174-UT.

22

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1 **Q. WHAT REMAINING ISSUES DID PNM IDENTIFY IN ITS DECEMBER**
2 **2018 COMPLIANCE FILING AND FEBRUARY 2019 FILING IN CASE**
3 **NO. 13-00390-UT THAT NEEDED TO BE DEVELOPED PRIOR TO**
4 **SEEKING NMPRC APPROVAL FOR ABANDONMENT?**

5 **A.** PNM identified numerous issues that needed to be determined before it could
6 properly seek and demonstrate grounds for abandonment of the San Juan coal
7 plant. These included:

8 1. The future ownership structure of the San Juan coal plant. PNM is only
9 one party to the *New Exit Date Amendment Amending and Restating the*
10 *Amended and Restated San Juan Project Participation Agreement* (“New
11 Exit Date Amendment”) among the San Juan coal plant owners and PNM
12 must adhere to and respect the rights of the other owners under that
13 agreement. The owners of the San Juan coal plant have followed the
14 contractual notification requirements under the applicable New Exit Date
15 Amendment. The notices that the San Juan coal plant owners exchanged
16 in the summer of 2018 were a preliminary step in the process of
17 determining whether they will continue to operate the plant beyond 2022.
18 PNM’s June 29, 2018 notice to the other owners specifically notes that
19 any abandonment is **“subject to receipt of an order from the**
20 **[Commission] authorizing PNM to abandon its interest in [SJGS].”**
21 **(emphasis added)** The notice was not PNM’s initiation of an
22 abandonment proceeding of the San Juan coal plant and served only to

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1 satisfy a contractual requirement under the New Exit Date Amendment
2 regarding PNM's future intentions. Similarly, the City of Farmington
3 ("Farmington") provided notice of its intention to continue with the San
4 Juan coal plant beyond June of 2022.

5 2. The potential sale of San Juan coal plant assets. Under the New Exit Date
6 Amendment, the San Juan coal plant owners had until November 15,
7 2018, to determine whether there were any third parties interested in
8 acquiring the interests of those owners who provided notice that they did
9 not intend to operate the San Juan coal plant after 2022. It was only when
10 the San Juan Generating Station Coordination Committee met on
11 November 29, 2018, that the San Juan coal plant owners, including PNM,
12 confirmed that there were no pending sales proposals and that no sales of
13 their respective interests had occurred.

14 3. The final order by the NMPRC on PNM's 2017 IRP filing. The 2017 IRP
15 was an integral part of Paragraph 19 of the Modified Stipulation in Case
16 No. 13-00390-UT. A final order was not issued by the Commission until
17 December 19, 2018, when the Commission accepted the 2017 IRP as
18 compliant with the IRP Rule, 17.7.3 NMAC.

19 4. Completion of the required request for proposals ("RFP") process and
20 selection of proposed replacement resources. PNM had been diligently
21 pursuing the actions and tasks necessary to present a complete application
22 for the San Juan coal plant abandonment and requests for approvals of
23 necessary replacement resources. To that end, PNM evaluated, with the

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1 assistance of outside consultants, the many bids received for numerous
2 replacement resources necessary to provide the Commission with reliable
3 estimates and costs related to the San Juan coal plant abandonment and
4 available replacement resources. The final selection of the proposed
5 replacement resources was completed in late June 2019.

6 5. PNM customer economic impact. PNM had not completed the final
7 analyses relating to the REMI economic impact study.

8 6. The potential influence of energy policy changes in the 2019 legislative
9 session. The Legislature adopted a new energy policy under the Energy
10 Transition Act that;

- 11 • promotes economic tools to transition the state's energy resources;
- 12 • increases renewable portfolio standards;
- 13 • addresses the regulatory treatment of the costs from abandoned
14 coal generation, including undepreciated investment; and,
- 15 • provides economic support to coal plant and coal mine workers
16 and communities impacted by the energy transition.

17 This energy policy legislation impacted PNM's analyses relating to the
18 abandonment of San Juan coal plant.

19
20 **Q. WHAT CONCLUSIONS DO YOU HAVE REGARDING PNM'S**
21 **DECISION TO FILE FOR ABANDONMENT OF THE SAN JUAN COAL**
22 **PLANT?**

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1 **A.** PNM could not make the required showing for abandonment of the San Juan coal
2 plant until it identified and secured the necessary replacement resources. Those
3 resources provided a lower cost portfolio for PNM customers. Of course, all new
4 resources are subject to Commission approval. In the absence of replacement
5 resources, Units 1 and 4 of the San Juan coal plant are still needed to serve
6 customers. Once PNM had analyzed and secured the necessary replacement
7 resources, it promptly filed its Consolidated Application on July 1, 2019. This
8 filing occurred after the effective date of the Energy Transition Act.

9

10 **III. RESPONSE TO STAFF WITNESS ON CCUS**

11 **Q. WHAT IS STAFF’S CONTENTION WITH RESPECT TO THE**
12 **PROPOSED ABANDONMENT OF SAN JUAN COAL PLANT?**

13 **A.** Staff claims that PNM’s application for abandonment of the San Juan coal plant
14 should be denied because PNM’s evaluation of whether to continue to operate the
15 plant was incomplete for not considering whether CCUS is a feasible and
16 economic alternative.

17

18 **Q. IF THE SAN JUAN COAL PLANT CONTINUES TO OPERATE BEYOND**
19 **2022, WOULD IT BE NECESSARY FOR CCUS TO BE INSTALLED AT**
20 **THE SAN JUAN COAL PLANT?**

21 **A.** Yes. The Energy Transition Act imposes new, stringent limitations on the carbon
22 emission rate applicable to the San Juan coal plant. These new standards limit

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1 carbon dioxide emissions from the San Juan coal plant to no more than 1,100
2 pounds per mega-watt hour after January 1, 2023. With these new limitations, the
3 San Juan coal plant cannot operate without installation of CCUS to cut carbon
4 emissions.

5

6 **Q. ARE ANY OTHER PARTIES IN THIS CASE OPPOSING PNM'S**
7 **ABANDONMENT OF THE SAN JUAN COAL PLANT?**

8 **A.** No. Staff is the only party that opposes abandonment of the San Juan coal plant.

9

10 **Q. DO OTHER PNM WITNESSES ALSO ADDRESS STAFF'S CLAIMS**
11 **REGARDING THE RETROFIT OF CCUS AT THE SAN JUAN COAL**
12 **PLANT?**

13 **A.** Yes, PNM Witnesses Phillips and Graves address the economics of installing
14 CCUS at the San Juan coal plant. They conclude that CCUS presents significant
15 economic and feasibility risks for PNM's customers.

16

17 **Q. WHAT ADDITIONAL INSIGHT DO YOU PROVIDE REGARDING**
18 **POTENTIAL INSTALLATION OF CCUS?**

19 **A.** Importantly, Staff has not presented any evidence that supports an alternative
20 CCUS scenario that benefits customers. There is no CCUS study that clearly
21 demonstrates PNM could economically retrofit the portion of the coal plant that is
22 needed to serve PNM customers. The analyses performed by PNM Witnesses
23 Phillips and Graves are in my opinion conservative in that their approach likely

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1 understates the costs required to retrofit CCUS and continue operations at the San
2 Juan coal plant in 2023 and beyond. The preliminary 2019 Sargent & Lundy pre-
3 feasibility report provided estimates for capital costs in the neighborhood of \$1.3
4 billion that are significantly lower than what the industry has been able to realize
5 in practice. The actual costs for CCUS could be much higher than the pre-
6 feasibility report projected. PNM Witness Graves provides estimates of what
7 these potential higher costs could be, based on evidence of much higher costs
8 experienced at the two commercially active CCUS units in North America.

9
10 **Q. ARE THERE OTHER POTENTIAL ENVIRONMENTAL COSTS THAT**
11 **MAY BE REQUIRED AT SAN JUAN COAL PLANT FOR CONTINUED**
12 **OPERATION UNDER A CCUS ALTERNATIVE THAT ARE NOT**
13 **INCLUDED IN THESE ANALYSES?**

14 **A.** Yes. As part of the second planning period under the U.S. Environmental
15 Protection Agency’s (“EPA”) Regional Haze Rule, the EPA is evaluating the need
16 for additional environmental controls for certain generation sources that may be
17 causing visibility impairment (“haze”) in Class I areas as set forth in 40 C.F.R. §
18 51.308(d)(1). A fairly significant potential cost for continued operation of San
19 Juan coal plant would be installation of Selective Catalytic Reduction (“SCR”)
20 technology to further reduce nitrogen oxide emissions, which contributes to haze
21 formation. Based on the past estimates for SCR on the four units of the San Juan
22 coal plant for purposes of compliance with the EPA’s Regional Haze Rule,
23 installation of SCRs on SJGS Units 1 and 4 would cost hundreds of millions of

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1 dollars. The New Mexico Environment Department (“NMED”) has confirmed
2 that the San Juan coal plant owners will not be required to conduct the four-factor
3 analysis under the Regional Haze Rule if the plant is shut down in 2022. The
4 NMED indicated to PNM that the NMED would be contacting Enchant Energy
5 and Farmington about the requirements under the Regional Haze Rule and the
6 new regional haze planning period so that they are aware of what they might need
7 to address if they are able to operate a CCUS retrofit plant after 2022 under new
8 ownership.

9
10 **Q. WHAT OTHER CONCERNS DO YOU HAVE PURSUING A CCUS**
11 **ALTERNATIVE SCENARIO FOR ON THE SAN JUAN COAL PLANT?**

12 **A.** In reviewing the costs of other CCUS projects, there is clearly a significant
13 potential for large project overruns on this developing technology. Also, the level
14 of investment required for this installation relative to the size of PNM raises
15 significant concern of financial risk to both PNM shareholders and PNM
16 customers. Assuming there would be other plant participants and PNM’s share of
17 costs remains unchanged, PNM’s share of the \$1.3 billion investment in CCUS
18 would increase the total PNM retail rate base by more than 30%. At present,
19 CCUS technology on existing coal plants is generally regarded by the utility
20 industry as nascent and costly. Even the pre-feasibility assumptions are more
21 costly than operating the plant as is and are underpinned by significant
22 speculation about future market conditions for electricity, CO2 commodity prices,
23 and oil and gas production. I think that it is also noteworthy that no owner, other

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1 than Farmington, has expressed any interest in pursuing CCUS at the San Juan
2 coal plant.

3
4 **Q. WHAT ARE YOUR CONCLUSIONS REGARDING CCUS ON THE SAN
5 JUAN COAL PLANT?**

6 **A.** PNM has demonstrated that the Scenario 1 replacement resources provide
7 economic value to PNM customers with the abandonment of the San Juan coal
8 plant. Installation of CCUS technology would impose a significant risk on project
9 completion and project cost while requiring the utility to speculate on potential
10 market conditions outside of its control. Pursuing continued operation of the San
11 Juan coal plant would clearly not be to PNM customers' benefit.

12
13 **IV. RESPONSE TO NEE ARGUMENTS ON ENVIRONMENTAL ISSUES**

14 **Q. WHAT DO YOU ADDRESS IN THIS SECTION OF YOUR REBUTTAL
15 TESTIMONY?**

16 **A.** I respond to NEE's general concerns about potential environmental impacts
17 stemming from the operation of the San Juan coal plant. Specifically, NEE
18 claims that there have been past environmental incidents and that coal combustion
19 residuals ("CCR") used for surface mine reclamation at the San Juan Coal Mine
20 will impact the environment.

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1 **Q. AS A THRESHOLD MATTER, IS THIS FORUM APPROPRIATE FOR**
2 **DETERMINING WHETHER THE SAN JUAN COAL PLANT IS IN**
3 **COMPLIANCE WITH APPLICABLE ENVIRONMENTAL**
4 **REGULATIONS OR HAS IMPACTED THE ENVIRONMENT?**

5 **A.** Respectfully no. The San Juan coal plant is subject to strict environmental
6 standards and requirements that are administered and enforced by the NMED and
7 the EPA. These agencies have specific responsibility for and expertise to assess
8 environmental compliance and impacts to the environment. Determinations on
9 environmental matters should be made by these agencies and not in this
10 proceeding.

11
12 **Q. HOW DOES PNM RESPOND TO NEE’S CLAIMS OF EITHER PAST OR**
13 **POTENTIAL FUTURE ENVIRONMENTAL IMPACTS FROM SAN JUAN**
14 **COAL PLANT OPERATIONS?**

15 **A.** As explained in the rebuttal testimonies of PNM Witnesses Hale and Cowin, the
16 San Juan coal plant is in compliance with applicable environmental permits, laws
17 and regulations. The use of CCR for surface mine reclamation at the San Juan
18 Coal Mine is specifically authorized by the New Mexico Energy, Minerals and
19 Natural Resources Department. As part of its ongoing operations, the San Juan
20 coal plant has an extensive monitoring network to assess any impacts to ground
21 water, and a dual set of ground water recovery systems to capture any potentially
22 impacted ground water.

23

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1 **Q. IS PNM SEEKING TO INCLUDE OR RECOVER ANY COSTS**
2 **ASSOCIATED WITH ANY POTENTIAL ENVIRONMENTAL IMPACTS**
3 **FROM SAN JUAN OPERATIONS IN THE REQUESTED FINANCING**
4 **ORDER OR OTHERWISE IN THIS CASE?**

5 **A.** No. PNM is seeking to include the estimated reasonable costs for
6 decommissioning the San Juan plant and the required underground mine
7 reclamation at the San Coal Juan Mine. The plant decommissioning and mine
8 reclamation cost estimates do not include any costs for any future potential
9 remediation. To the extent any such costs might be required to be incurred in the
10 future, PNM would need to request recovery through a rate making proceeding.
11 In summary, cost recovery for potential environmental impacts are not at issue in
12 this proceeding.

13

14

IV. CONCLUSION

15 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.**

16 **A.** The abandonment application filed on July 1, 2019, required PNM to work
17 through many preliminary steps and considerations beforehand, and also required
18 PNM to develop concrete replacement resources for review and approval of the
19 Commission. PNM has satisfied Staff's concern with PNM's abandonment
20 analysis by modeling and demonstrating that a CCUS retrofit of the coal plant by
21 PNM is not economical. The alternative contemplated by Staff would subject
22 customers to speculative market assumptions and significant costs. Finally,

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1 although NEE raised generic concerns over possible environment issues, the coal
2 plant operates in compliance with its environmental permits and those issues are
3 subject to the regulation of other agencies and are outside the scope of this
4 proceeding.

5

6 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

7 **A. Yes.**

GCG# 526357

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GENERATING STATION UNITS 1 AND 4)
_____)

AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

THOMAS G. FALLGREN, Vice President of Generation for Public Service Company of New Mexico, upon being duly sworn according to law, under oath, deposes and states: I have read the foregoing **Rebuttal Testimony of Thomas G. Fallgren** and it is true and correct based on my personal knowledge and belief.

SIGNED this 14th day of November, 2019.



THOMAS G. FALLGREN

SUBSCRIBED AND SWORN to before me this 14th day of November, 2019.



NOTARY PUBLIC IN AND FOR
THE STATE OF NEW MEXICO

My Commission Expires:

1-21-2020