

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION)
OF PUBLIC SERVICE COMPANY OF NEW)
MEXICO FOR APPROVAL TO ABANDON)
SAN JUAN GENERATING STATION UNITS)
2 AND 3, ISSUANCE OF CERTIFICATES)
OF PUBLIC CONVENIENCE AND)
NECESSITY FOR REPLACEMENT POWER)
RESOURCES, ISSUANCE OF ACCOUNTING)
ORDERS AND DETERMINATION OF)
RELATED RATEMAKING PRINCIPLES AND)
TREATMENT,)

Case No. 13-00_____-UT

PUBLIC SERVICE COMPANY OF NEW)
MEXICO,)

Applicant)
_____)

DIRECT TESTIMONY AND EXHIBITS

OF

RONALD N. DARNELL

December 20, 2013

NMPRC CASE NO. 13-00 _____ -UT
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WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

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AFFIDAVIT

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I. INTRODUCTION AND OVERVIEW OF TESTIMONY

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

A. My name is Ronald N. Darnell. I am Senior Vice President, Public Policy, for Public Service Company of New Mexico (“PNM”). My business address is 414 Silver Avenue SW, Albuquerque, New Mexico 87102.

Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS SENIOR VICE PRESIDENT, PUBLIC POLICY.

A. As Senior Vice President, Public Policy, I am responsible for regulatory and governmental affairs, corporate communications and marketing, and community relations and stakeholder engagement. My regulatory function includes responsibility for load forecasting and resource planning.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS.

A. PNM Exhibit RND-1 describes my educational and professional qualifications.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION (“COMMISSION”)?

A. Yes. A listing of the cases in which I have testified is also contained in PNM Exhibit RND-1.

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Q. WHAT HAS BEEN YOUR INVOLVEMENT IN THE MATTERS THAT ARE DESCRIBED IN YOUR TESTIMONY?

A. Throughout the course of the matters described in my testimony, I have provided executive oversight of PNM's decisions. In particular, I have led PNM's efforts to mitigate costs associated with San Juan Generating Station's ("SJGS") compliance with the Regional Haze Rule under the federal Clean Air Act ("CAA"), specifically seeking lower cost alternatives to the Federal Implementation Plan ("FIP") adopted by the Environmental Protection Agency ("EPA"), as more fully described in my testimony. Included in these efforts was overseeing PNM's participation in stakeholder meetings, testifying before the New Mexico Environmental Improvement Board ("EIB") concerning the Revised State Implementation Plan ("Revised SIP") and participating in strategic decisions concerning the appellate proceedings in the United States Court of Appeals for the Tenth Circuit ("Tenth Circuit").

Q. COULD YOU PLEASE BEGIN BY PRESENTING AN OVERVIEW OF YOUR TESTIMONY?

A. PNM is asking the Commission for the regulatory approvals needed for PNM to make changes in the operation of SJGS to implement the terms of a non-binding agreement negotiated with the New Mexico Environment Department ("NMED") and the EPA. As the result of that agreement, a Revised SIP has been approved by the EIB and has been submitted to the EPA for review and proposed final

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1 action. The implementation of the Revised SIP, will be tremendously
2 advantageous on many levels for PNM and its customers, and for our natural
3 environment as well. PNM acted reasonably and prudently in entering into the
4 non-binding agreement that led to the Revised SIP. PNM's Application in this
5 case should be approved and all costs associated with complying with the Revised
6 SIP, as proposed in PNM's Application, should be granted rate recovery.

7
8 **Q. WHY IS THE REVISED SIP BENEFICIAL FOR PNM, ITS CUSTOMERS**
9 **AND THE ENVIRONMENT?**

10 **A.** The implementation of the Revised SIP will achieve a number of important
11 benefits. First, it will lower the costs PNM and its customers would otherwise
12 have to shoulder for additional environmental upgrades at SJGS related to the
13 FIP. Under the FIP, promulgated under the EPA's Regional Haze Rule, PNM
14 would have been compelled to install costly Selective Catalytic Reduction
15 ("SCR") technology on all four of the SJGS units by September 21, 2016. As the
16 result of the PNM's negotiations with the State and EPA, and assuming EPA's
17 approval of the Revised SIP and the Commission's approval of PNM's
18 Application, PNM will retire SJGS Units 2 and 3 and will be able to install the
19 much less costly Selective Non-Catalytic Reduction ("SNCR") technology on
20 SJGS Units 1 and 4.

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1 The estimated capital cost of installing SCR on all four units is in the range of
2 \$824 to \$910 million. By contrast, as demonstrated by Mr. O'Connell,
3 compliance with the Revised SIP, including the costs associated with replacement
4 power and recovery of the undepreciated investment in SJGS Units 2 and 3 over a
5 reasonable period of time with a compensatory carrying charge, is less costly for
6 customers than installing SCR on all four units. It was only the commitment to
7 retire Units 2 and 3 that made SNCR acceptable to the EPA.

8
9 Second, the Revised SIP provides comprehensive environmental benefits beyond
10 those that would be realized under the FIP. While emissions of nitrogen oxides
11 ("NOx") are somewhat higher under the Revised SIP than under the FIP, the
12 Revised SIP will result in reductions in other air emissions including sulfur
13 dioxide ("SO₂"), particulate matter ("PM"), carbon monoxide ("CO") and carbon
14 dioxide ("CO₂"), volatile organic compounds ("VOC") and mercury that would
15 not be achieved under the FIP. There will also be reductions in water
16 consumption and in the generation of coal combustion residuals ("CCR").
17 Vehicle emissions from trucking raw materials and waste around the site, and to
18 and from the facility, will also be reduced. Further, reductions in greenhouse
19 gases resulting from the Revised SIP will better position SJGS to comply with
20 future anticipated greenhouse gas emission regulations applicable to fossil fuel
21 electric plants.

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1 Third, approval by EPA of the Revised SIP will bring to an end costly litigation
2 that would otherwise be needed to resolve the question of what additional
3 environmental upgrades should be installed at SJGS to comply with the Regional
4 Haze Rule. PNM has appealed the promulgation of the FIP to the Tenth Circuit,
5 but the Court has not decided that appeal and there can be no assurance that PNM
6 would be successful in the appeal or that a successful appeal would necessarily
7 result in the EPA's approval of New Mexico's original state implementation plan
8 ("SIP").

9
10 Separately, PNM has agreed with the State of New Mexico to additional terms
11 that are carefully crafted to mitigate adverse economic impacts on the Four
12 Corners Region and the local Native American community. In addition, PNM's
13 Application avoids adverse effects on PNM's system reliability by identifying
14 cost-effective replacement resources for SJGS Units 2 and 3 that provide a
15 properly diversified fuel mix going forward. The retirement of Units 2 and 3
16 should also facilitate the exit from active plant participation of four of the SJGS
17 owners, but the details of the project restructuring are still under discussion by the
18 plant participants.

19
20 **II. PROMULGATION OF THE FIP AND PNM RESPONSES THERETO**

21
22 **Q. LET'S MOVE TO A DISCUSSION OF THE EPA'S PROMULGATION OF**
23 **THE FIP AND THE DEVELOPMENTS THAT HAVE TAKEN PLACE**

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1 **SINCE THEN. COULD YOU PLEASE START BY DESCRIBING THE**
2 **FIP?**

3 **A.** Effective September 21, 2011, the EPA adopted a FIP establishing SCR as the
4 Best Available Retrofit Technology (“BART”) to control NOx emissions from
5 SJGS as required to meet the EPA’s Regional Haze Rule. EPA required each unit
6 of SJGS to meet these limits by September 21, 2016. A copy of the FIP, as
7 published in the Federal Register, is attached as PNM Exhibit RND-2.

8
9 **Q. WHY DID THE EPA ISSUE THE FIP?**

10 **A.** As reflected in the FIP, the EPA invoked authority under two provisions of the
11 CAA that address protection of visibility in designated national parks and
12 wilderness areas and that prohibit a state’s emissions from interfering with
13 required visibility protection measures in another state. Under the first CAA
14 provision, commonly referred to as the Regional Haze Rule, states are – or in the
15 absence of a state action, EPA is – required to determine and establish emission
16 limits that reflect BART for certain sources of emissions, including electric
17 generating facilities, that are known to contribute to or cause haze formation. The
18 FIP also invoked the CAA section known as the “good neighbor” provision that
19 provides that a state must ensure adequate measures are being taken to prohibit
20 emissions from within the state in amounts that will interfere with measures in
21 other states to protect visibility.

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1 When a state has not adopted a plan to address regional haze, or has submitted a
2 state plan the EPA deems inadequate, EPA can implement a federal plan. EPA
3 found in January 2009 that New Mexico had failed to submit a SIP addressing the
4 regional haze requirements under the CAA, including the requirement for a
5 BART determination for SJGS. EPA therefore issued a proposed FIP in January
6 2011 and a final FIP in August 2011.

7
8 **Q. DID NEW MEXICO EVER ISSUE A SIP?**

9 **A.** Yes. In June 2011, prior to the EPA's issuance of the final FIP, New Mexico
10 submitted a complete Regional Haze SIP ("2011 SIP") identifying a much less
11 expensive technology, SNCR, as BART for the four SJGS units. PNM supported
12 the 2011 SIP. The 2011 SIP was submitted to the EPA for review in July 2011.
13 Nevertheless, the following month EPA moved forward with the FIP, including a
14 BART determination requiring SCR for each of the four SJGS units.

15
16 **Q. WHAT IS THE STATUS OF THE 2011 SIP?**

17 **A.** On November 27, 2012, EPA published in 77 Fed. Reg. 70,693 its approval of the
18 2011 SIP except for the provisions related to the SJGS NOx BART determination.
19 The EPA stated that it had "yet to propose action on [New Mexico's] submitted
20 NOx BART determination for the San Juan Generating Station" and that "it
21 remains a submitted pending SIP revision at this time." The EPA approved all
22 other parts of the 2011 SIP, including the SO₂ Backstop Trading Program for the

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1 reduction of New Mexico SO₂ emissions (which other parties have appealed to
2 the Tenth Circuit) as well as the BART determination for PM emissions from
3 SJGS. The EPA's approval of these portions of the 2011 SIP did not require the
4 addition of any additional emissions controls at SJGS.

5
6 **Q. WHAT STEPS HAS PNM TAKEN TO MITIGATE THE COSTS OF**
7 **COMPLYING WITH THE FIP?**

8 **A.** PNM, together with the State of New Mexico, through Governor Martinez and the
9 NMED ("State Petitioners"), petitioned the Tenth Circuit to review and overturn
10 the FIP. In addition, PNM and the State Petitioners sought a stay of the FIP
11 compliance date pending review by the Tenth Circuit. In the absence of such a
12 stay PNM would be required to expend large amounts of money to plan, design
13 and begin construction of SCR in order to meet the compliance deadline imposed
14 by the FIP (September 21, 2016) before any final determination by the Court of
15 the lawfulness of the FIP requirement. On March 1, 2012, the Tenth Circuit
16 denied the requests for stay without explaining its reasons for doing so. A copy of
17 the Court's order denying the petition for stay is attached as PNM Exhibit RND-3.

18
19 I should mention that WildEarth Guardians, an environmental advocacy group,
20 also petitioned the Tenth Circuit for review of the FIP, seeking to impose a three-
21 year compliance deadline of September 21, 2014, for installation of SCR at SJGS.
22 PNM, the State Petitioners and EPA all opposed the proposed three-year deadline

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1 as unreasonable. All the appeals were consolidated by the Tenth Circuit for
2 purposes of briefing and oral argument. All briefs have been filed and oral
3 argument took place on October 22, 2012.

4
5 The Tenth Circuit has received status reports regarding the negotiations that led to
6 the Term Sheet which I describe below. The Court directed the parties to the
7 pending legal challenges to the FIP to enter into mediation to seek resolution of
8 the litigated issues. Although no global settlement of the litigated issues has
9 resulted from the mediation, some progress was made. PNM filed a motion to
10 abate the proceedings before the Tenth Circuit so that the Term Sheet could be
11 implemented without the risk that the Tenth Circuit would rule. None of the
12 parties objected to the motion to abate and on October 17, 2013, the Tenth Circuit
13 issued an order abating the proceedings.

14
15 **Q. DID PNM TAKE OTHER STEPS TO MITIGATE THE COSTS OF**
16 **COMPLYING WITH THE FIP?**

17 **A.** Yes. PNM and the State Petitioners also sought an administrative stay of the
18 FIP's September 16, 2016, compliance deadline and petitioned the EPA to
19 reconsider the FIP. In support of the administrative stay request, they provided
20 documentation demonstrating, among other things, that EPA's cost projections for
21 the installation of SCR at SJGS were grossly under-estimated. To date, EPA has
22 not acted on the petitions for reconsideration or on the requests to stay the

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1 compliance deadline. While the EPA did grant administrative stays of any
2 interim deadlines through November 29, 2012, in order to facilitate discussions
3 regarding a possible alternative to the FIP, the EPA did not extend the FIP's
4 September 21, 2016, compliance deadline.

5
6 **Q. WHAT WERE THE IMPLICATIONS OF THE DENIAL OF THE**
7 **REQUESTED STAY OF THE FIP COMPLIANCE DEADLINE?**

8 **A.** PNM was required to move forward to begin the process of installing SCR in
9 order to meet the FIP requirements, even though there was a chance that the FIP
10 would ultimately be overturned by the Tenth Circuit. Accordingly, PNM filed an
11 application for modification of the SJGS air permit with the NMED on May 4,
12 2012, for the addition of the emissions controls required under the FIP. The
13 modified air permit was issued by the NMED on August 31, 2012.

14
15 The modified air permit also included an alternate scenario for SNCR at SJGS,
16 should the BART NOx determination contained in the 2011 SIP ultimately be
17 approved by the EPA. A copy of the modified air permit is attached as PNM
18 Exhibit RND-4. PNM Exhibit RND-5 is a copy of the Statement of Basis-
19 Narrative for the modified air permit. PNM Exhibit RND-5 also confirms that
20 work toward complying with the FIP was required, even though the FIP is under
21 judicial review, in order to meet the deadline imposed by the FIP should it not be
22 overturned.

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1
2 As explained by Mr. Sategna, before PNM placed its FIP compliance efforts in
3 abeyance due to the Term Sheet, PNM had incurred a total of about \$2.8 million
4 in costs associated with the proposed installation of SCR on all four of the SJGS
5 units, as required by the FIP. Because these costs were incurred in good faith in
6 furtherance of mandatory environmental compliance as a necessary cost of doing
7 business, PNM is seeking rate recovery of these costs. As addressed by Mr.
8 Sategna, PNM is seeking an accounting order and Commission authorization to
9 recover these costs in its next general rate case filing.

10
11 **Q. WHAT OTHER ACTIONS TOOK PLACE IN REGARD TO EPA'S**
12 **PROMULGATION OF THE FIP?**

13 **A.** The NMED convened a series of stakeholder meetings in August 2012 that
14 included representatives from WildEarth Guardians, Western Resource
15 Advocates, Sierra Club, New Energy Economy, Dine CARE, New Mexico
16 Industrial Energy Consumers, San Juan Citizens Alliance, National Parks
17 Conservation Alliance, the Navajo Nation, the New Mexico Public Regulation
18 Commission Staff, the City of Farmington, San Juan County, the National Park
19 Service and PNM. The NMED also conducted public meetings in Farmington (at
20 which EPA representatives appeared) to solicit input from the general public on
21 potential alternatives to the FIP. Similar public meetings were conducted on the
22 Navajo Nation. Governor Martinez was instrumental in getting the parties and

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1 stakeholders to the table to explore various alternatives to the FIP. President Ben
2 Shelly of the Navajo Nation was also personally involved.

3
4 **Q. DID THESE DISCUSSIONS RESULT IN ANY PROPOSALS THAT**
5 **MIGHT LEAD TO A MORE COST-EFFECTIVE COMPROMISE?**

6 **A.** Yes. Using information obtained through the stakeholder process, on October 2,
7 2012, NMED proposed a settlement that, if implemented, would have resulted in
8 the retirement of SJGS Units 1 and 2 by December 31, 2017, replacement of those
9 units with natural gas and other non-coal generation and the installation of SNCR
10 at Units 3 and 4. The EPA did not accept this proposal. However, after further
11 discussions, PNM, NMED and EPA entered into a term sheet dated February 15,
12 2013 ("Term Sheet"), which provided the terms and conditions for the possible
13 replacement of the FIP with the Revised SIP after receipt of all necessary
14 regulatory approvals.

15
16 **Q. PLEASE DESCRIBE THE TERM SHEET.**

17 **A.** The Term Sheet is attached as PNM Exhibit RND-6. It provides the substance,
18 process and timeline for an agreement that, if fully implemented, will result in the
19 withdrawal and replacement of the FIP. The Term Sheet "reflects a tentative
20 agreement on technical terms and an appended corresponding timeline for action
21 intended to address pollution control requirements for the San Juan Generating
22 Station under the Clean Air Act's requirements for regional haze and interstate

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1 transport for visibility.” These terms, it provides, “have no binding effect and will
2 only become binding if incorporated into a settlement agreement that receives all
3 necessary EPA and Department of Justice approvals” Term Sheet,
4 introductory paragraph.

5
6 The Term Sheet sets out a process whereby BART compliance would be achieved
7 by the shut-down of SJGS Units 2 and 3 by December 31, 2017, with SNCR to be
8 installed on Units 1 and 4 by no earlier than January 31, 2016 (assuming a timely
9 EPA decision by August 2014). In addition, the Term Sheet provides that natural
10 gas combustion turbine(s) that will be sited at SJGS to partially replace Unit 2 and
11 3 capacity must undergo Best Available Control Technology analysis. The Term
12 Sheet states that if the Revised SIP is approved by the EPA, this will “lead to EPA
13 action withdrawing the federal implementation plan for SJGS.” *Id.*, ¶ 2.

14
15 The Term Sheet specifies, among other things, that the SNCR technology on
16 Units 1 and 4 will achieve an average NO_x emission rate of no greater than 0.23
17 lb/MMBtu on a daily rolling 30-day average basis. *Id.*, ¶ 1(c). It also provides
18 for various performance testing to confirm whether an even lower NO_x emission
19 rate than 0.23 lb/MMBtu might be achieved and then implemented on Units 1 and
20 4. *Id.*, ¶ 1(d). It further provides for an SO₂ emission rate of 0.10 lb/MMBtu for
21 Units 1 and 4. *Id.*, ¶ 1(e).

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1 **Q. IN LIGHT OF THE TERM SHEET, IS THE EPA STILL REQUIRING**
2 **PNM TO PROCEED WITH THE INSTALLATION OF SCR AS**
3 **REQUIRED BY THE FIP?**

4 **A.** While not providing a formal stay of the FIP, EPA recognized in a letter dated
5 February 15, 2013, from the EPA Regional Administrator for Region 6 to PNM's
6 CEO and the Secretary of NMED ("EPA Letter") that PNM may defer taking
7 steps to comply with the FIP while the State of New Mexico developed the
8 Revised SIP and goes through the regulatory process required to submit the
9 Revised SIP to EPA. A copy of the EPA Letter is attached as PNM Exhibit RND-
10 7.

11
12 **Q. HAS THE EIB ACTED ON THE REVISED SIP?**

13 **A.** Yes. On September 5, 2013, the EIB conducted hearings in Farmington on the
14 Revised SIP. The EIB took technical and policy testimony from several parties
15 and also considered public comments from governmental agencies, members of
16 the local community, legislators, current and former SJGS employees, the San
17 Juan County Commission and customers. President Shelly spoke in favor of the
18 Revised SIP, as did other representatives of several Chapters of the Navajo
19 Nation, and the Pueblo of Santo Domingo.

20
21 On the same date, at the conclusion of the hearing, and after deliberations, the
22 EIB voted unanimously to approve the Revised SIP. The EIB thereafter entered

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1 its Order and Statement of Reasons for Adoption of SIP Revisions in EIB Docket
2 No. 13-02(R) (“Statement of Reasons”), a copy of which is attached as PNM
3 Exhibit RND-8.

4
5 The Statement of Reasons found that “the public interest will be served by
6 implementation of the State Alternative [the Revised SIP]. Specifically, in
7 addition to satisfying the NO_x BART requirements of the CAA, implementation
8 of the State Alternative will result in significant reductions in sulfur dioxide,
9 particulate matter, carbon dioxide, and mercury; significant reductions in coal ash
10 generated and water consumed.” Statement of Reasons, ¶ 24. The Statement of
11 Reasons directed the NMED to submit the Revised SIP “as expeditiously as
12 possible to EPA for approval.” *Id.*, Ordering Paragraph on page 6 of 7.

13
14 Consistent with the Term Sheet and the Statement of Reasons, on October 7,
15 2013, the Revised SIP was submitted to the EPA for approval as a replacement
16 for the FIP. Mr. Olson describes the timeframe and steps necessary for EPA
17 approval. Also, page 7 of the Term Sheet contains a general timeline of actions
18 required to implement the Term Sheet.

19
20 PNM filed an application with the NMED to amend the SJGS air permit to
21 comply with the Revised SIP. As addressed by Mr. Olson, this filing was made

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1 on October 4, 2013, and the NMED issued the revised air permit on November 8,
2 2013.

3
4 **Q. HOW DO THE TERM SHEET AND THE REVISED SIP DIFFER?**

5 **A.** The Term Sheet is broader in scope than the Revised SIP. The Term Sheet calls
6 for the NMED to develop and seek adoption of the Revised SIP for presentation
7 to the EIB, which has now been accomplished. The Term Sheet contains other
8 commitments by PNM which flow from adoption and implementation of the
9 Revised SIP, but approval of the Revised SIP by the EIB and the EPA is not
10 dependent on those other commitments.

11
12 **Q. WHAT IS THE STATUS OF THE FIP IF EPA DOES NOT APPROVE**
13 **THE REVISED SIP?**

14 **A.** If the EPA does not approve the Revised SIP, and the FIP is not overturned on
15 appeal, PNM must comply with the FIP in order to continue operating SJGS. If
16 the EPA does not approve the Revised SIP it is expected that EPA will establish a
17 new compliance schedule consistent with the time PNM spent pursuing the
18 Revised SIP and seeking EPA approval of the Revised SIP. The installation of
19 SCR technology, as required by the FIP, would have to be addressed with the
20 other SJGS owners and the associated cost and cost sharing issues resolved with
21 these owners in a manner consistent with the SJGS participation agreement.

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1 **Q. COULD SJGS CONTINUE TO OPERATE AFTER THE COMPLIANCE**
2 **DEADLINE WITHOUT BEING IN COMPLIANCE WITH WHATEVER**
3 **BART DETERMINATION IS ULTIMATELY ADOPTED BY THE EPA?**

4 **A.** No. It is unlikely that SJGS would be allowed to continue to operate while not in
5 compliance with the applicable BART determination.
6

7 **III. BENEFITS OF REVISED SIP AND PNM'S APPLICATION**

8
9 **Q. WHY ARE THE REVISED SIP AND APPROVAL OF PNM'S APPLICATION**
10 **BETTER THAN COMPLIANCE WITH THE FIP?**

11 **A.** PNM has been determined throughout the process I have described to find a
12 solution for the BART determination for SJGS that would reduce the high costs
13 associated with the FIP and the installation of SCR. In New Mexico, 20% of our
14 population lives at or below the U.S. poverty level. But more broadly, PNM has
15 an obligation under the Public Utility Act to provide service at just and reasonable
16 rates, and keeping costs under control is obviously an important part of being able
17 to provide reasonably priced electricity. As I noted at the start of my testimony,
18 the Revised SIP and PNM's associated proposals in this case will result in lower
19 costs for our customers than any other feasible alternative.

20
21 The Revised SIP also results in added environmental benefits not achievable
22 under the FIP. The Term Sheet which includes the Revised SIP was crafted
23 giving careful consideration to the economic impact on the Four Corners region.

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1 The Revised SIP will not adversely affect the reliability of electric service to
2 PNM's customers given PNM's Application and our identification of future
3 resources to replace SJGS Units 2 and 3.

4
5 **A. *COST EFFECTIVENESS***

6
7 **Q. WHAT EVIDENCE SUPPORTS THE PROPOSITION THAT THE**
8 **REVISED SIP IS LESS COSTLY TO CUSTOMERS THAN THE FIP?**

9 **A.** PNM engaged Black & Veatch Corporation and Sargent & Lundy LLC to conduct
10 engineering studies to determine the estimated costs of installing SCR at SJGS for
11 presentation to the EPA during EPA's consideration of the FIP. Although EPA
12 determined that the estimates presented by PNM were, in EPA's opinion,
13 overstated, PNM's estimates were confirmed when PNM issued a Request for
14 Proposals for the SCR work and received competitive bids. PNM, with the help
15 of expert consultants, designed a competitive process to result in the lowest
16 reasonable cost to engineer, procure and construct the SCR.

17
18 Using a long-term integrated planning approach, Mr. O'Connell has calculated the
19 net present value of revenue requirements ("NPVRR") of the costs of compliance
20 with the FIP over a twenty-year planning horizon compared to the NPVRR of the
21 cost of compliance with three other portfolios over the same time frame.
22 Specifically, the four portfolios examined by Mr. O'Connell were the following:

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- 1 • Comply with the Regional Haze Rule as required by the Revised SIP by
2 installing SNCR on SJGS Units 1 and 4, retiring Units 2 and 3, and replacing
3 the retired capacity with a mix of resources including additional capacity in
4 SJGS Unit 4, Palo Verde Nuclear Generating Station (“PVNGS”) Unit 3, new
5 solar generation and a gas peaking plant;
- 6 • Comply with the Regional Haze Rule requirements as required by the Revised
7 SIP by installing SNCR on Units 1 and 4, retiring Units 2 and 3, and replacing
8 the retired capacity with additional capacity in SJGS Unit 4, new solar
9 generation and three gas peaking plants;
- 10 • Comply with the Regional Haze Rule as required by the FIP by installing SCR
11 on all four SJGS units (no replacement capacity is needed in this case); and
- 12 • Comply with the Regional Haze Rule requirements by retiring all four SJGS
13 units and replacing the retired capacity with PVNGS Unit 3 and a combination
14 of natural gas and renewable energy resources.

15

16 As reflected in Mr. O’Connell’s PNM Exhibit PJO-3, the most cost-effective of
17 the four options is the first, which is reflected in PNM’s Application in this case:
18 meeting the Regional Haze Rule requirements through the Revised SIP and
19 replacing the retired SJGS capacity with additional capacity in SJGS Unit 4,
20 PVNGS Unit 3, a gas peaking plant and solar generation. This option is the
21 lowest in cost and provides the best protection against the risks of future cost
22 increases due to volatile natural gas prices and anticipated environmental

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1 regulation. The first (and preferred) option has a NPVRR over 20 years of
2 approximately \$780 million less than installing SCR and keeping the net 340 MW
3 of retired San Juan capacity. The other three options all result in lesser benefits.
4 The option of installing SCR on all four SJGS units is the most expensive and the
5 option of retiring all four SJGS units is the riskiest due to volatile natural gas
6 prices and a range of future costs associated with anticipated environmental
7 regulation.

8
9 **Q. IS PNM WILLING TO TRANSFER ITS INTEREST IN PVNGS UNIT 3**
10 **FROM AN EXCLUDED RESOURCE THAT IS NOT SUBJECT TO**
11 **COMMISSION JURISDICTION TO A RESOURCE THAT HAS BEEN**
12 **GRANTED A CCN TO SERVE NEW MEXICO RETAIL CUSTOMERS?**

13 **A.** Yes, but we are only willing to do so at a fair valuation for ratemaking purposes.
14 Based on the valuation study prepared by Concentric Energy Advisors
15 (“Concentric”), as presented by Mr. Reed, a fair valuation for ratemaking
16 purposes is in the range of \$2,542/kW to \$2,625/kW. For 134 MW of capacity,
17 that equates to a rate base valuation of in the range of \$341 million to \$352
18 million. Mr. Horn provides additional information demonstrating why this
19 valuation is appropriate. Mr. O’Connell demonstrates that customers are fairly
20 treated because PVNGS Unit 3 inclusion is cost-effective for them even at a
21 valuation as high as \$3,100/kW.

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1 It would not be appropriate to value PVNGS Unit 3, for a regulated utility, at the
2 net book value of PVNGS Unit 3 because, as explained by Mr. Sategna, the net
3 book value reflects a \$181.3 million write-down, borne by shareholders, that the
4 Company took in 1992 that likely would not have occurred but for the exclusion
5 of PVNGS Unit 3 from jurisdictional rates. As noted by Mr. Horn, PVNGS Unit
6 3 has been a sizable contributor of earnings and, although power prices are not
7 high enough today to contribute the same level of earnings, power prices fluctuate
8 and it is possible that a higher level of earnings could be achieved in the future.

B. ENVIRONMENTAL BENEFITS

11
12 **Q. DOES THE REVISED SIP MEET THE REQUIREMENTS OF THE CAA?**

13 **A.** The determination of compliance with the CAA is initially a determination for the
14 EIB, subject to final approval by EPA. In its recent adoption of the Revised SIP,
15 the EIB found the Revised SIP to be in compliance with the CAA. The EIB
16 stated that “NMED’s determination that the State Alternative constitutes BART
17 for NO_x for the SJGS complies with the guidelines [in the applicable federal
18 regulations] and properly weighs the statutory factors of [the CAA].” PNM
19 Exhibit RND-8, ¶ 22.

20
21 **Q. WHAT ENVIRONMENTAL BENEFITS WILL BE ACHIEVED UNDER**
22 **THE REVISED SIP THAT WOULD NOT BE ACHIEVABLE UNDER THE**
23 **FIP?**

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1 **A.** The Revised SIP will result in very significant reductions in overall air emissions
2 from SJGS. The installation of SNCR with an emission limit of 0.23 lb/MMBtu
3 will decrease NOx emissions from Units 1 and 4 by 23%. Coupled with the
4 retirement of Units 2 and 3, overall plant emissions of NOx will be reduced by
5 62%. In addition, NOx emissions may be further reduced based on the outcome
6 of the NOx emissions studies referenced in the Term Sheet. If the testing shows
7 that additional NOx reductions are feasible, those reductions will be incorporated
8 in the SJGS air permit in the form of reduced emission limits.

9
10 SJGS's SO₂ emissions limit will also be reduced by 67%. The Revised SIP calls
11 for reduction in permitted SO₂ emissions from Units 1 and 4 to 0.10 lb/MMBtu
12 from the existing limit of 0.15 lb/ MMBtu. This represents a 33% reduction of
13 permitted SO₂ emissions from just these two units. With the retirement of Units 2
14 and 3, SO₂ emissions will be further reduced by 34%. The significant reductions
15 in NOx and SO₂, together with reductions in PM emissions from the shutdown of
16 Units 2 and 3, translate into visibility improvements comparable to those that
17 would be achieved under the FIP. Any differences in visibility under the Revised
18 SIP and the FIP would not be discerned by the naked eye.

19
20 The retirement of Units 2 and 3 brings with it not only improvements to visibility
21 but other important environmental benefits. In addition to the reductions in NOx
22 and SO₂, all other air emissions, including greenhouse gases, will be reduced by

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approximately half. The reductions in greenhouse gas emissions will better position SJGS to comply with future anticipated federal greenhouse gas emissions regulations applicable to fossil fuel electric generating plants and potentially gives PNM the opportunity to claim early CO₂ reduction credits. The retirement of the two units will also reduce water consumption and the generation of CCR. Table 1 below provides a summary comparison of the reduction of overall air emissions, water consumption and CCR generated during plant operation between the Revised SIP and the FIP.

Table 1. Reduction Comparison of San Juan Current Emissions, Water Use and CCRs Generation to Revised SIP and EPA FIP (%)

	NOx	SO ₂	PM	CO	VOC's	CO ₂	Mercury	Water Consumption	CCR
Revised SIP	62%	67%	50%	44%	50%	50%	50%	53%	48%
FIP	83%	0	0	0	0	0	0	0	0

Under the Revised SIP, NO_x, SO₂ and CO emissions from SJGS will be reduced by 62%, 67% and 44%, respectively, and emissions of PM, VOC, CO₂ and hazardous air pollutants (including mercury) will be reduced by approximately 50%. Additional environmental benefits will include an estimated 53% reduction in water usage while solid waste generation (*e.g.*, CCR including spent limestone) will be reduced by approximately 50%. Vehicle emissions from trucking raw

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1 materials and waste around the site, and to and from the facility, will be reduced
2 by about 50%. Fugitive dust emissions from on-site hauling of raw materials and
3 waste on paved and unpaved roads along with fugitive dust emissions from
4 conveying coal, the pulverizers and duct leaks will be decreased, also by about
5 50%. By contrast, the FIP would achieve no environmental benefit other than
6 NOx reduction, and even that reduction would not result in a perceptible
7 improvement in visibility compared to what will be achieved under the Revised
8 SIP.

9
10 I would also note that, as I have mentioned, PNM is asking in its Application for
11 approval to transfer its interest in PVNGS Unit 3 from an excluded resource to an
12 included supply resource to serve New Mexico retail customers. PVNGS Unit 3
13 does not produce air emissions, which will also assist in PNM being able to meet
14 possible future greenhouse gas emission regulations.

15
16 **Q. GIVEN THE SUBSTANTIAL ENVIRONMENTAL BENEFITS YOU**
17 **HAVE IDENTIFIED FROM RETIRING SJGS UNITS 2 AND 3, WOULD**
18 **IT NOT BE BETTER TO ALSO RETIRE UNITS 1 AND 4?**

19 **A.** No. Mr. Ortiz discusses the importance of having a diversified resource portfolio
20 for meeting customer needs. Virtually any generation source will have an
21 environmental impact to one extent or another. Mr. Cichanowicz demonstrates
22 that, after compliance with the Revised SIP and the installation of balanced draft,

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1 SJGS Units 1 and 4 will have cost-effective, state-of-the-art environmental
2 controls in place, thus maintaining SJGS as a valuable part of a properly
3 diversified fuel mix. Mr. O'Connell has compared the cost to customers of
4 retiring all four SJGS units. PNM's supply portfolio is much more cost-effective
5 with SJGS Units 1 and 4 than without them.

6
7 ***C. REGIONAL ECONOMIC EFFECTS, RELIABILITY,***
8 ***LITIGATION AND OTHER BENEFITS***

9
10 **Q. IS SJGS IMPORTANT TO THE ECONOMY OF THE FOUR CORNERS**
11 **REGION?**

12 **A.** Yes. Mr. Olson provides a general description of SJGS and its role in providing
13 service to customers in New Mexico and other states. SJGS employs
14 approximately 400 local residents with an annual payroll of about \$40.5 million
15 and additional payroll benefits of about \$16.3 million. San Juan Coal Company
16 ("SJCC"), the operator of the San Juan underground mine that supplies coal to
17 SJGS, employs approximately 500 local residents with an annual payroll of about
18 \$45 million. Both workforces are diverse and include very significant
19 representation from the local Native American community. Twenty-two percent
20 of the SJGS employees and 46% of the SJCC employees are Native American.
21 Coal royalties paid to state, tribal and local governments total approximately
22 \$54.8 million per year, and SJGS alone accounts for about \$6.4 million annually
23 in local property taxes.

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Q. HOW DO THE TERM SHEET AND THE REVISED SIP ADDRESS THE ECONOMY IN THE FOUR CORNERS REGION?

A. The Term Sheet and Revised SIP were developed with a recognition that economic development in the Four Corners region would be affected by the retirement of two of the SJGS units. Some of the potential adverse economic impacts resulting from the retirement of Units 2 and 3 will be mitigated by the installation of SNCR on Units 1 and 4 which, along with a new gas peaking plant(s) and associated pipeline, is estimated to bring 350 person-years of construction work to the area. PNM has also committed to not lay off any employees as a result of the retirement of SJGS Units 2 and 3 and instead to make necessary work force reductions through attrition. As I have mentioned, Mr. O'Connell testifies that the net present value of the costs of compliance with the Revised SIP over a twenty-year planning horizon, as proposed in PNM's Application, is less than the costs of compliance with the FIP over the same time frame.

Further, PNM is undertaking efforts to assist the local Native American population to prepare for the jobs that are important to the Four Corners economy, including jobs that will be required for the construction of the SNCR and the gas peaking plant(s). PNM, the Navajo Nation, San Juan Community College and the Navajo Technical University have entered into a Memorandum of Understanding under which PNM will provide up to \$1 million over five years beginning in 2013

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1 for a job training program for eligible members of the Navajo Nation. PNM will
2 also support the Four Corners Economic Development Corporation with a
3 contribution of \$50,000 per year for the next three years.

4
5 **Q. WHAT EVIDENCE SUPPORTS YOUR STATEMENT THAT PNM'S**
6 **APPLICATION DOES NOT ADVERSELY AFFECT RELIABILITY?**

7 **A.** SJGS is an integral part of the power supply in the Southwest. While the
8 reduction in the power supply to the grid will be significant due to the retirement
9 of Units 2 and 3, the Revised SIP allows sufficient time for the planning and
10 coordination for any necessary replacement power. Utilizing an integrated
11 resource planning ("IRP") approach, Mr. O'Connell has performed analyses to
12 determine the most cost-effective resources to maintain service reliability, given
13 the retirement of SJGS Units 2 and 3. As shown by his testimony, the addition of
14 78 MW of additional capacity from SJGS Unit 4 and 134 MW from PVNGS Unit
15 3 contribute to the most cost-effective supply portfolio to replace the capacity lost
16 due to the retirement of SJGS Units 2 and 3.

17
18 **Q. WHY DOES PNM BELIEVE THAT THE REVISED SIP IS BETTER**
19 **THAN CONTINUING TO LITIGATE TO GET THE FIP OVERTURNED?**

20 **A.** PNM filed the Tenth Circuit appeal because we believed there was a strong case
21 that in adopting the FIP the EPA improperly failed to even consider the 2011 SIP.
22 However, as in any litigation, there is no certainty that PNM would be able to

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1 prevail in the Tenth Circuit. As I have mentioned, the Court denied the stay of the
2 FIP sought by PNM and the State Petitioners, which obviously was not a positive
3 development for the prospects of overturning the FIP. PNM has reasonably
4 concluded that the Revised SIP is better than the risk of having the FIP approved,
5 especially given the enhanced overall environmental benefits at lower cost that
6 result from the Revised SIP.

7
8 In addition, even if the Tenth Circuit overturns the FIP, it does not necessarily
9 follow that the Court will require the EPA to adopt the 2011 SIP. A potential
10 outcome of the appeal is that the EPA will be ordered to fully consider the 2011
11 SIP. After the EPA has considered the 2011 SIP, EPA may still ultimately decide
12 to reject the 2011 SIP and reissue the BART determination in its FIP. Indeed, the
13 Secretary-Designate of the NMED has testified before the EIB that this was one
14 of his concerns that led to NMED's agreement to the Term Sheet. A copy of the
15 relevant portions of the transcript of the EIB hearings in this regard is attached as
16 PNM Exhibit RND-9.

17
18 **Q. ARE THERE ANY ISSUES YOU WOULD LIKE TO MENTION IN**
19 **REGARD TO THE IMPLEMENTATION OF THE REVISED SIP AND**
20 **THE SJGS OWNERSHIP STRUCTURE?**

21 **A.** Yes. As noted by Mr. Olson, we anticipate that there will be changes to the SJGS
22 ownership structure that will result from the implementation of the Revised SIP.

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1 Compliance with the high capital costs associated with SCR as well as SNCR
2 creates difficult problems for several of the other SJGS owners. Four entities that
3 are participants in SJGS Units 3 and 4 (City of Anaheim, Southern California
4 Public Power Authority, M-S-R Public Power Agency and one other owner) have
5 indicated their desire to exit from active participation in SJGS. Discussions are
6 taking place between PNM and the other SJGS participants to address new plant
7 ownership arrangements. While the final ownership structure had not been agreed
8 upon as of the time of the filing of PNM's Application in this case, the terms of
9 the new ownership structure will be filed as soon as possible with the
10 Commission so as to allow the Commission to grant any requisite regulatory
11 approvals in this case, or in future cases if necessary.

IV. CONCLUSION

14
15 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.**

16 **A.** PNM could have, but did not, simply accept EPA's BART determination for
17 SJGS requiring installation of expensive SCR technology. Instead, PNM chose to
18 work toward a solution that provides greater overall environmental benefits at a
19 lower cost to customers, without sacrificing service reliability. PNM's actions
20 have been prudent and reasonable, to the benefit of customers and the natural
21 environment, and all costs associated with complying with the Revised SIP, as
22 proposed in PNM's Application, should be allowed recovery in rates. As

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1 described more fully by Mr. Sategna, this includes recovery as a regulatory asset
2 of the undepreciated investment in SJGS Units 2 and 3.

3
4 To disallow rate recovery of this investment would send the wrong message to
5 utilities: Do not make an economic decision that benefits customers if to do so
6 will result in “stranding” prudently incurred costs to the detriment of
7 shareholders. PNM has acted reasonably and prudently for the benefit of
8 customers and shareholders and should not be penalized for doing so.
9 Disallowance of this rate recovery would not fairly and properly balance the
10 interests of customers, shareholders and the overall public interest.

11
12 **Q. WHAT ARE PNM’S ALTERNATIVES IF THE COMMISSION**
13 **DECLINES TO APPROVE PNM’S APPLICATION?**

14 **A.** Unfortunately, there really are no good alternatives. If the Commission were to
15 decline to approve the abandonment of SJGS Units 2 and 3, as requested in the
16 Application, PNM would be unable to comply with the Term Sheet and with the
17 Revised SIP. If PNM is unable to comply with the Revised SIP, the Company
18 would need to carefully review the whole plant ownership structure and the
19 continued viability of the SJGS project.

20
21 Of course, PNM cannot unilaterally decide to stop operating SJGS. If the
22 Commission decides that SJGS Units 2 and 3 should not be abandoned because

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1 the present or future public convenience and necessity require their continued
2 operation, PNM will be required to comply with the FIP, unless the FIP is
3 ultimately overturned as a result of court action. That in itself presents additional
4 difficulties associated with other SJGS owners, at least some of whom would
5 certainly resist paying their proportionate share of the high costs associated with
6 the FIP. The Revised SIP represents the best alternative to complying with the
7 CAA and PNM's Application should be approved.

8
9 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

10 **A. Yes.**

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