

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

**IN THE MATTER OF THE APPLICATION)
OF PUBLIC SERVICE COMPANY OF NEW)
MEXICO FOR REVISION OF ITS RETAIL)
ELECTRIC RATES PURSUANT TO ADVICE)
NOTICE NO. 595)**

Case No. 20-00270-UT

**PUBLIC SERVICE COMPANY OF NEW)
MEXICO,)**

Applicant)

_____)

**DIRECT TESTIMONY
OF
R. BRENT HEFFINGTON**

December 5, 2022

NMPRC CASE NO. 22-00270-UT
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WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

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I. INTRODUCTION AND PURPOSE

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

A. My name is R. Brent Heffington. I am the Managing Director of Generation for Public Service Company of New Mexico (“PNM” or “Company”). My business address is 2401 Aztec Road NE, Albuquerque, NM 87107.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I detail and support the generation-related cost elements of PNM’s revenue requirements in this case. First, I provide an overview of PNM’s generation resources and their role in PNM’s generation portfolio as needed to serve customers. Second, I discuss PNM’s generation capital budgeting processes, including how priorities are established and how capital budgets are monitored and controlled. Third, I summarize PNM’s capital investments in generation facilities for the period from July 1, 2022, through the end of the Test Period December 31, 2024, known as the Capital Investment Period. Fourth, I describe the major capital investments required for the safe, reliable and efficient operation of PNM’s electric generating facilities while complying with all federal, state and local regulations. Fifth, I discuss the sale of certain PNM-owned assets related to Palo Verde Nuclear Generating Station (“Palo Verde” or “PVNGS”) to the Salt River Project Agricultural Improvement and Power District (“SRP”). Sixth, I address the budgeting and oversight of generation operations and maintenance (“O&M”) expenditures. Seventh, I address the necessary non-fuel O&M expenditures

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1 relating to PNM’s generation fleet utilized in developing the Base Period expenses
2 and the appropriate Base Period adjustments for generation O&M expenditures.
3 Eight, I address PNM’s nuclear fuel costs for Palo Verde. Ninth, I address the
4 necessity and the prudence of PNM’s continued investments in the Four Corners
5 Power Plant (“Four Corners” or “FCPP”). Finally, pursuant to, the Modified
6 Revised Stipulation in NMPRC Case No. 16-00276-UT, I address the prudence of
7 three specific projects related to the San Juan Generating Station (“San Juan” or
8 “SJGS”), and certain one-time costs associated with the shutdown of San Juan
9 earlier in 2022.

10

11 **Q. WHAT ARE YOUR KEY CONCLUSIONS?**

12 **A.** Overall, I conclude that:

- 13 • PNM uses a thorough capital budgeting process to prioritize generation capital
14 projects, and projects are carefully monitored to control expenditures. The
15 generation capital investments during the Capital Investment Period are the
16 result of this process and are reasonable and necessary for PNM to continue
17 meeting its customers’ energy needs in a safe, reliable and cost-effective
18 manner. These investments are critical as we transition from our baseload coal
19 generation to carbon-free renewables.
- 20 • PNM’s generation O&M costs are the product of reasoned planning and
21 vigilant cost controls. The Test Period O&M expenses represent the necessary
22 costs for PNM to continue to safely and reliably operate PNM’s generation
23 facilities.

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- 1 • PNM’s scheduled plant maintenance is necessary for reliable, cost-effective
2 operation. Plant maintenance expenses vary considerably from year-to-year
3 because some maintenance intervals are based on plant unit run hours and plant
4 unit starts instead of time-based intervals. As such, historical O&M expenses
5 incurred in a single year do not accurately represent the level of scheduled
6 maintenance costs that will be incurred during the Test Period. Therefore, it is
7 necessary to use a normalized approach to determine the appropriate amount
8 of scheduled maintenance costs to include in the Test Period.
- 9 • With the retirement of San Juan and the expiration of 114 MW of Palo Verde
10 leased capacity, carbon-free replacement resources are and will continue to
11 come on-line to meet customer needs. However, these replacement resources
12 are not dispatchable 24/7, so our transition to cleaner energy will require our
13 gas plant fleet to be dispatched up to full nameplate capacity on a 24/7 basis.
14 This ability to be dispatched up to full load on a 24/7 basis is a critical and the
15 gas fleet will play a vital role in maintaining resource adequacy as more and
16 more non-dispatchable renewables are added to our system. Therefore,
17 continued capital investments and O&M expenses are critical to maintaining
18 our gas generation fleet until such time as the gas units are removed from
19 service at or near 2040.
- 20 • PNM’s nuclear fuel costs associated with Palo Verde are necessary and
21 reasonable to provide PNM customers with reliable, carbon-free energy.
- 22 • Four Corners remains an important resource in PNM’s generation fleet in
23 providing reliable energy to customers. Until such time as PNM is authorized

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1 to abandon Four Corners and to replace it with carbon-free or lower carbon
2 resources, PNM must continue making necessary capital investments and incur
3 operating costs in order to serve customer needs. PNM's past and anticipated
4 capital investments in Four Corners through the Test Period are both
5 reasonable and prudent.

- 6 • Because of the retirement of San Juan Units 2 and 3 in 2018, the San Juan
7 owners were required to make capital investments to reconfigure San Juan to
8 continue operation with Units 1 and 4 in a safe and reliable manner. PNM's
9 share of these costs, which were addressed in the Modified Stipulation in Case
10 No. 16-00276-UT, were both necessary and prudent. These costs are included
11 in the amounts to be securitized under the San Juan energy transition bonds
12 and PNM is not seeking any recovery for these costs in this case.

13
14 **Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS MANAGING**
15 **DIRECTOR OF GENERATION.**

16 **A.** I am responsible for the strategic direction and operation of PNM's generating
17 resources to ensure that they continue to provide safe, reliable and cost-effective
18 electricity generation to customers within PNM's service territory. The functions I
19 oversee include generation operations, maintenance, engineering, construction, fuel
20 and power procurement, wholesale power marketing and other services related to
21 PNM's generation fleet. I have oversight responsibility with respect to PNM's
22 ownership interests in generation resources where PNM is not the operator,

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1 specifically, Four Corners and Palo Verde. Previously, I had direct oversight
2 responsibility for the operation of San Juan.

3 **Q. HAVE YOU PREPARED A STATEMENT OF YOUR EXPERIENCE AND**
4 **QUALIFICATIONS?**

5 **A.** Yes. My educational background and professional experience are outlined in PNM
6 Exhibit RBH-1.

7

8 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN ANY ADMINISTRATIVE**
9 **PROCEEDINGS?**

10 **A.** No, I have not.

11

12 **Q. HOW IS PNM GENERATION SUPPORTING NEW MEXICO'S ENERGY**
13 **FUTURE?**

14 **A.** PNM Generation is supporting New Mexico's energy future by facilitating the
15 Company's commitment to integrate increasing amounts of carbon-free energy and
16 renewable resources now and in the coming years while providing safe, reliable and
17 affordable power to our customers.

18

19 Today, PNM is transforming its generation portfolio to cleaner resources in
20 response to state policies that combine the need to reduce carbon emissions with a
21 recognition of the widespread availability of low-cost renewable technologies and
22 the rise of new technologies such as energy storage. As of October 31, 2022, the
23 Company provided customers with an energy mix that is 55% carbon-free,

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1 including resources owned, leased and under purchase power agreements
2 (“PPAs”). As part of this resource mix, PNM utilizes an existing portfolio of
3 renewable resources totaling over 1,057 MW that includes solar, wind, and
4 geothermal generation to serve our customers.

5

6 PNM abandoned San Juan Units 2 and 3 at the end of 2018, and recently abandoned
7 San Juan Unit 1 on June 30, 2022, and San Jun Unit 4 on September 30, 2022. With
8 the full abandonment of San Juan, PNM reduced total CO₂ emissions from its
9 generation fleet by 68% when compared to 2005 levels. PNM’s remaining coal
10 generation consists of only 200 MW in Four Corners. Ultimately, the Company’s
11 goal is to transform PNM’s generation to 100% carbon-free emissions by 2040,
12 which is five years ahead of the state’s mandate for carbon-free energy in 2045.
13 Many of the investments that PNM Generation is making in both capital projects
14 and O&M expenses that are included in this rate case are being made to continue
15 providing reliable energy as we move toward achieving this carbon-free goal.

16

17 **II. OVERVIEW OF PNM’S GENERATION RESOURCES**

18 **Q. PLEASE DESCRIBE PNM’S CURRENT GENERATION PORTFOLIO.**

19 **A.** PNM’s generation portfolio consists of a diverse mix of generation resources which
20 includes coal, nuclear, natural gas and renewable resources. While PNM owns a
21 significant amount of generation capacity, either outright or in participation with
22 other owners, an increasing amount of PNM’s generation resources are procured

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1 through PPAs, where PNM has a contractual entitlement to the full output from a
2 third-party generation facility; and energy storage agreements (“ESAs”), where
3 PNM has a contractual right to capacity from a third-party energy storage facility.
4 PNM’s remaining leased interests in Palo Verde, totaling 114 MW, will expire in
5 January 2023 and January 2024, leaving PNM with an ownership interest of 288
6 MW.

7

8 PNM’s New Mexico jurisdictional generation resources that are anticipated to be
9 in-service on December 31, 2024, are summarized below in PNM Table RBH-1.

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**PNM Table RBH-1
PNM's Retail Generation Resources**

GENERATING PLANT	OWNER SHIP STATUS	COUNTY	FUEL TYPE	PNM SHARE (%)	PNM SHARE OF CAPACITY (MW)	IN-SERVICE DATE	OPERATING AGENT
FOUR CORNERS UNITS 4 & 5	Owned	San Juan	Coal	13.0%	200	1969-1970	APS
PALO VERDE UNIT 1	Owned	Maricopa	Nuclear	2.266667%	30	1985-1986	APS
PALO VERDE UNIT 2	Owned	Maricopa	Nuclear	9.406667%	124	1985-1986	APS
PALO VERDE UNIT 3	Owned	Maricopa	Nuclear	10.2%	134	1988	APS
AFTON GENERATING STATION	Owned	Dona Ana	Natural Gas	100%	235	2007	PNM
RIO BRAVO GENERATING STATION	Owned	Bernalillo	Natural Gas	100%	149	2000	PNM
LA LUZ ENERGY FACILITY	Owned	Valencia	Natural Gas	100%	41	2015	PNM
LORDBURG GENERATING STATION	Owned	Hidalgo	Natural Gas	100%	84	2002	PNM
LUNA ENERGY FACILITY	Owned	Luna	Natural Gas	33.3%	190	2006	PNM
REEVES GENERATING STATION	Owned	Bernalillo	Natural Gas	100%	144	1958-1962	PNM
UTILITY SCALE SOLAR PV	Owned	Various	Solar	100%	158	2011 - 2019	PNM
TOTAL MW					1489		

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1 **Q. PLEASE DESCRIBE PNM'S COAL AND NUCLEAR RESOURCES.**

2 **A.** PNM has ownership interests in Four Corners and Palo Verde. Coal-fired and
3 nuclear-powered generation plants typically operate at close to full capacity
4 throughout the year. These generation plants generally have no or limited ability
5 to vary their output rapidly and their primary characteristic and benefit is that they
6 provide electricity to customers at a very stable rate. These are the baseload
7 facilities that currently supply electricity to PNM customers. PNM's coal and
8 nuclear plants are described below:

- 9 • *Four Corners:* Arizona Public Service Company ("APS") operates Four
10 Corners which is located near Fruitland, New Mexico. PNM owns a thirteen
11 percent share of Four Corners Units 4 and 5, representing 200 MW, which it
12 acquired in 1969 and 1970, respectively. Four Corners provides needed
13 baseload energy and capacity to serve PNM customers.
- 14 • *Palo Verde:* APS also operates Palo Verde which is located west of Phoenix,
15 Arizona, and is the nation's largest nuclear generating station. The three units
16 at Palo Verde came online between 1986 and 1988 and have operating licenses
17 that extend to 2046 and 2047. PNM's current ownership consists of both leased
18 and owned percentages. In January 2023, PNM's ownership in Unit 1 will be
19 reduced from 10.2% to 2.266667%, reflecting the expiration of 104 MW of
20 leased capacity. In January 2024, PNM's ownership in Unit 2 will be reduced
21 from 10.2% to 9.406667%, reflecting the expiration of 10 MW of leased
22 capacity. PNM's ownership in Unit 3 will be unchanged. Please see PNM
23 Table RBH-2 to view PNM's share of ownership in Palo Verde.

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**PNM Table RBH-2
PNM's Ownership of Palo Verde**

Palo Verde Unit	PNM Ownership		
	1/1/2022	1/1/2023	1/1/2024
1	10.2%	2.266667%	2.266667%
2	10.2%	10.2%	9.406667%
3	10.2%	10.2%	10.2%

Q. PLEASE DESCRIBE PNM'S NATURAL GAS RESOURCES.

A. The current natural gas resources in PNM's generation fleet are comprised of fast-starting flexible natural gas units, steam turbines, heavy frame units and combined cycle units. Taken together, these resources provide low-cost energy through economic dispatch and play an important role in supporting the continued and rapid addition of renewable energy resources to PNM's resource mix. These gas resources are as follows:

- *Afton Generating Station ("Afton")*: Afton is a 235 MW natural gas-fired generating plant that is wholly owned and operated by PNM and is located near La Mesa in the southern part of New Mexico. It consists of one General Electric ("GE") Frame 7FA gas turbine, a heat recovery steam generator, and a GE A10 steam turbine. Afton can be operated in a simple cycle mode or as a combined cycle generating facility. Power generated at Afton can be delivered to customers in either southern or northern New Mexico via contracted transmission rights.
- *La Luz Energy Facility ("La Luz")*: La Luz is a 41 MW simple cycle natural gas-fired generating station that is wholly owned and operated by PNM and is located near Belen, New Mexico. La Luz is a single LM6000 aeroderivative gas

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1 turbine which provides quick start capability needed for voltage regulation and
2 peak demand response. La Luz is sited adjacent to an existing PNM switching
3 station and transmission facilities.

- 4 • *Lordsburg Generating Station (Lordsburg)*: Lordsburg is an 84 MW simple
5 cycle natural gas-fired generation facility located in Hidalgo County, New
6 Mexico. The plant consists of two LM6000 aeroderivative gas turbines that
7 provide peaking power to PNM’s customer base. Lordsburg is wholly owned
8 by PNM, and PNM contracted with the NAES Corporation to provide on-site
9 O&M on behalf of PNM. Power generated at Lordsburg can be delivered to
10 customers in either southern or northern New Mexico via owned transmission
11 rights.

- 12 • *Luna Energy Facility (“Luna”)*: Luna is a 570 MW natural gas-fired combined
13 cycle generating facility located near Deming, New Mexico. The facility
14 consists of two GE frame 7FA gas turbines, two heat recovery steam generators,
15 and one GE D11 steam turbine. PNM, Tucson Electric Power Company,
16 Samchully Power and Utilities 1, LLC, jointly own equal shares in Luna, with
17 PNM serving as operating agent under a participation agreement among the
18 three owners. PNM’s generation share of Luna is 190 MW. The Luna owners
19 have contracted with the NAES Corporation to provide on-site O&M. Power
20 generated at Luna can be delivered to customers in either southern or northern
21 New Mexico via owned or contracted transmission rights.

- 22 • *Reeves Generating Station (“Reeves”)*: Reeves, which is located in northern
23 Albuquerque, is a 144 MW natural gas-fired generating plant that is wholly

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1 owned and operated by PNM. Reeves consists of three gas-fired conventional
2 boiler and steam turbine units. Unit 1 produces 42 MW, unit 2 produces 41
3 MW, and Unit 3 produces 61 MW. Power generated at Reeves can be delivered
4 to customers in northern and southern New Mexico via owned or contracted
5 transmission rights.

- 6 • *Rio Bravo Generating Station (“Rio Bravo”)*: Rio Bravo is a simple-cycle 149
7 MW dual fuel generating plant that is wholly owned and operated by PNM and
8 is located in Albuquerque. Rio Bravo can operate on diesel fuel or natural gas
9 and consists of one GE Frame 7FA gas turbine. Power generated at Rio Bravo
10 can be delivered to customers in northern and southern New Mexico via owned
11 or contracted transmission rights.

12
13 **Q. IS PNM PROPOSING TO CHANGE THE TERMINAL DATES FOR ITS**
14 **EXISTING GAS PLANT FLEET TO ALIGN WITH PNM’S GOAL OF A**
15 **CARBON-FREE GENERATION PORTFOLIO BY 2040?**

16 **A.** Yes, PNM proposes to change the terminal dates to 2040 for the gas plants shown
17 in PNM Table RBH-3:

**PNM Table RBH-3
PNM’s Proposed Terminal Dates**

Plant	Current Terminal Year	2022 Proposed Terminal Year
Afton	2042	2040
La Luz	2055	2040
Lordsburg	2042	2040
Luna	2046	2040

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1 As indicated above, we are proposing to reduce the Afton and Lordsburg terminal
2 dates by two years, the Luna terminal date by six years and the La Luz terminal
3 date by fifteen years. The new terminal dates will be used in our future resource
4 planning and were provided to PNM witness Watson for his depreciation study.

5

6 **Q. PLEASE DESCRIBE PNM’S RENEWABLE GENERATION**
7 **RESOURCES.**

8 **A.** The current renewable resources in PNM’s generation fleet include wind, solar
9 photovoltaic (“PV”) and geothermal energy. PNM also purchases excess solar
10 production from distributed generation located on customer sites. Generation from
11 renewable resources is “must take” and is utilized when available, subject to any
12 system restrictions or requirements. The PNM-owned solar PV generation consists
13 of 158.4 MW as shown in PNM Table RBH-4, and is comprised of the following:

14
15

**PNM Table RBH-4
PNM’s Owned Solar PV**

Facility	COD	County	Gross Maximum Capacity (MW)
Alamogordo Solar	10/15/2011	Otero	5.0
Albuquerque Solar Energy Center (Reeves)	4/8/2011	Bernalillo	2.0
Cibola Solar	2/1/2015	Cibola	8.0
Deming Solar	8/8/2011	Luna	9.0
Las Vegas Solar	12/15/2011	San Miguel	5.0
Los Lunas Solar	6/1/2011	Valencia	7.0
Manzano Solar	10/11/2013	Valencia	8.4
Meadow lake Solar	12/31/2014	Valencia	8.9
Otero Solar	12/1/2013	Otero	8.0
Prosperity Battery E	9/19/2011	Bernalillo	0.5
Prosperity Solar	9/19/2011	Bernalillo	0.5
Rio Communities Solar	12/31/2015	Valencia	10.0

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Facility	COD	County	Gross Maximum Capacity (MW)
Rio Del Oro Solar	5/31/2019	Valencia	10.0
Rio Rancho Solar	12/3/2019	Bernalillo	10.0
San Miguel 1 Solar	9/20/2019	San Miguel	10.0
San Miguel 2 Solar	10/15/2019	San Miguel	10.0
Sandoval Solar	12/31/2014	Sandoval	6.1
Santa Fe Solar	12/31/2015	Santa Fe	9.5
Santolina Solar	12/31/2015	Bernalillo	10.5
South Valley Solar	12/31/2015	Bernalillo	10.0
Vista Solar	3/5/2019	Valencia	10.0
			158.4

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Other renewable resources that PNM uses to serve jurisdictional needs and to meet its New Mexico renewable portfolio standard requirement are delivered pursuant to PPAs approved by the Commission. PNM Table RBH-5 below is a list of PPAs that are in-service or planned to be online through the Test Period, and includes the actual or anticipated commercial operation date (“COD”) for each resource.

**PNM Table RBH-5
Approved PPAs**

Project	Technology	Capacity (MW)	County	COD or Expected COD*
Arroyo Solar	Solar	300	McKinley	May 1, 2023*
Atrisco Solar	Solar	300	Bernalillo	May 1, 2024*
Dale Burgett Geothermal Plant	Geothermal	11	Hidalgo	January 1, 2018
Jicarilla Solar 1	Solar	50	Rio Arriba	March 31, 2023*
Jicarilla Solar 2	Solar	50	Rio Arriba	April 30, 2022
La Joya Wind Facility, Phase 2	Wind	141.18	Torrence	June 30, 2021
NMWEC - Lone Mesa	Wind	200	Quay	September 17, 2018
Red Mesa Wind Energy Center	Wind	102.4	Cibola	January 1, 2015
San Juan Solar 1	Solar	200	San Juan	May 1, 2024*
Valencia Energy Facility	Natural Gas	155	Valencia	May 31, 2008

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1 PNM has also received approval to add a significant amount of battery storage
2 facilities in the near term which is critical to reaching a zero-carbon portfolio by
3 2040. The ESAs for these projects and their respective CODs included in the Test
4 Period are listed below in PNM Table RBH-6.

**PNM Table RBH-6
Approved ESAs**

Project	Technology	Capacity (MW)	County	COD or Expected COD*
Arroyo Energy Storage	BESS	150	McKinley	May 1, 2023*
Atrisco Energy Storage	BESS	300	Bernalillo	May 1, 2024*
Jicarilla Storage 1	BESS	20	Rio Arriba	March 31, 2023*
SJS 1 Storage	BESS	100	San Juan	May 1, 2024*

7 In addition to its renewable energy resources being used to serve system needs and
8 meet renewable portfolio standards, PNM utilizes Company-owned and PPA-
9 provided resources to offer three voluntary renewable energy programs to
10 customers: (1) the Sky Blue program, (2) the Solar Direct program, and (3) Rate
11 36B.

12
13 **Q. ARE ALL OF THE IN-SERVICE GENERATION RESOURCES LISTED IN**
14 **PNM TABLES RBH-1 THROUGH RBH-6 NECESSARY TO MEET**
15 **CUSTOMER NEEDS AND PROVIDE RELIABLE SERVICE TO PNM'S**
16 **CUSTOMERS?**

17 **A.** Yes. Though the utilization rates of these resources vary through the year
18 depending on the type of resource, each of these resources is necessary and used to
19 provide service to customers. The different types of generation resources in PNM's

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1 overall portfolio are designed to meet varying customer demands while ensuring
2 grid reliability at affordable rates.

3

4 **Q. HOW DO THE DIFFERENT CHARACTERISTICS OF THESE**
5 **GENERATION RESOURCES ENSURE ELECTRIC GRID RELIABILITY?**

6 **A.** Reliability of the electrical system grid is essential and, as the amount of non-
7 dispatchable renewable resources increases on PNM's system, maintaining system
8 reliability is no longer simply a matter of maintaining sufficient capacity in excess
9 of peak demand. Rather, a diverse and flexible portfolio of resources that can match
10 constantly fluctuating levels of demand is required.

11

12 **III. PNM'S GENERATION CAPITAL INVESTMENT PROCESS**

13 **Q. PLEASE DESCRIBE PNM'S CAPITAL INVESTMENT PROCESS FOR**
14 **ITS GENERATION RESOURCES.**

15 **A.** PNM uses a thorough capital budgeting process to prioritize generation capital
16 projects and carefully monitors and controls capital expenditures. The generation
17 capital investments during the Capital Investment Period are the result of this
18 process and are reasonable and necessary for PNM to continue meeting its
19 customers' energy needs in a safe, reliable and cost-effective manner.

20

21 **Q. WHAT ARE THE VALUE DRIVERS USED TO EVALUATE PNM**
22 **GENERATION PROJECTS?**

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1 **A.** There are six core operational value drivers to categorize each capital project in this
2 rate case: (1) Safety; (2) Environmental; (3) Reliability; (4) Security; (5)
3 Compliance, and (6) System Performance. Each project may have only one, or in
4 some cases many value drivers to determine the value of each project. However, a
5 primary driver is identified for each project for prioritization and ranking. This is
6 discussed later in my testimony.

7

8 **Q. HOW DOES PNM SELECT CAPITAL PROJECTS FOR ITS**
9 **GENERATION FACILITIES?**

10 **A.** PNM employs two processes for capital budgeting for generation facilities. First,
11 there is the process PNM uses for the generation facilities that PNM wholly owns
12 or for which PNM has partial ownership and serves as the operating agent. Second,
13 PNM participates in a similar capital budgeting process at Four Corners and Palo
14 Verde, which are plants in which PNM has a partial ownership interest, but which
15 PNM does not operate.

16

17 **Q. PLEASE DESCRIBE THE CAPITAL BUDGET PROCESS USED FOR**
18 **GENERATION FACILITIES THAT PNM OWNS OR PARTIALLY OWNS**
19 **AND OPERATES.**

20 **A.** As explained by PNM witness Sanders, PNM Generation is provided annual capital
21 allowances for a five-year period as a guide for budgeting purposes. PNM's
22 budgeting process for the generation facilities that PNM owns or partially owns and
23 operates begins when plant staff identifies potential projects that are considered

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1 essential to further PNM’s operational objectives. PNM then develops cost
2 estimates for all options for each respective needed capital project. Project options
3 are evaluated and ranked based on safety, environmental, compliance, system
4 performance, security, and reliability benefits. The estimating process involves
5 internal and external technical experts (*i.e.*, engineers, manufacturers and other
6 outside experts) who define the project scope and develop the cost estimates using
7 the best available information for each potential project.

8
9 Next, the costs of all potential capital projects are totaled and compared to the
10 annual generation capital allowance. Typically, PNM must prioritize its capital
11 spending because capital needs exceed available capital funds. PNM Generation
12 management prioritizes and pursues the capital projects in the portfolio around
13 aspects essential to meet the PNM operational objectives described above. The
14 Resource Council, which consists of the Chief Operating Officer and the Chief
15 Financial Officer, reviews the summarized capital budget requests compared to
16 targets and approves any adjustments needed. PNM witness Sanders discusses this
17 in more detail in his testimony.

18
19 As the capital projects are executed throughout the year, management tracks the
20 spending on the projects to the original capital plan at both the plant level and
21 overall generation portfolio budget. Project managers are held accountable to meet
22 their project cost and delivery goals. Because cost overages in any one project must
23 be offset by expenditure reductions in other areas of the overall generation portfolio

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1 budget, accuracy in both forecasting and execution are required to allow each plant
2 to meet its respective budget along with the overall budget.

3

4 In the case of the budget at Luna, where PNM acts as operating agent, PNM
5 presents the proposed capital budgets to the Luna owners for review and final
6 approval. Throughout this process, PNM strives to balance the cost of each project
7 with the benefits to customers that will be derived from the project.

8

9 **Q. CAN YOU DESCRIBE HOW THE CAPITAL PROJECT COST**
10 **ESTIMATING PROCESS WORKS?**

11 **A.** Depending on the complexity of the project, PNM obtains data from a variety of
12 sources to develop cost estimates for generation projects. Initially, PNM's
13 Generation Engineering staff develops preliminary cost estimates based on
14 information from recent similar projects. Preliminary cost estimates are also
15 formed by information from equipment suppliers, construction contractors and
16 other industry information.

17

18 Depending on the size and complexity of the project, estimating may also be
19 performed by an outside firm engaged to engineer the project. For large or complex
20 projects, estimating may be performed by an outside firm engaged in the role of
21 "Owner's Engineer." This is an industry standard practice. The Owner's Engineer
22 is a firm with proven experience in designing and executing projects of the scope
23 and technology being considered.

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2 For large or complex projects, one of the critical decisions is the contracting
3 strategy. The contracting strategy influences the estimating strategy for the
4 continuing development of the project. For example, if the contracting strategy is
5 to use an Engineer, Procure, Construct (“EPC”) contract, the next refinement of the
6 project cost estimate will likely be based on proposals from the EPC bidders.
7 Depending on the structure of the request for proposals, either a single proposal
8 may be selected for an EPC contract or separate parties may be selected for
9 engineering, equipment, supply and construction components of the project. When
10 scope and schedule are clearly defined, firm fixed contracts are competitively bid
11 and awarded to secure fixed pricing and schedule compliance during project phases.

12

13 Assuming the project is authorized based on cost estimates produced in the
14 preceding steps, a periodic restatement of the cost estimate is made as the project
15 scope, schedule and bidding is developed. Estimated values for equipment and
16 construction services are replaced with amounts quoted by firms competing for
17 each specific contract. For large projects that require multiple years to execute, the
18 periodic restatement of the cost estimate is necessary to establish accurate annual
19 forecasts.

20

21 **Q. DOES PNM UTILIZE COMPETITIVE BIDDING AS PART OF ITS COST**
22 **ESTIMATING PROCESS?**

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1 **A.** Yes. As generation projects are refined, PNM often relies on a competitive bidding
2 process to finalize cost estimates for capital projects. The Generation Engineering
3 staff assesses the bids and selects the most qualified vendor or contractor to perform
4 the work. PNM reviews the bid in totality (cost, quality, schedule) when selecting
5 the winning bid and placing the contract.

6

7 **Q.** **DESCRIBE THE PROCESS THAT PNM GENERATION USES TO**
8 **MONITOR EXPENDITURES UNDER ITS CAPITAL BUDGET AND**
9 **MINIMIZE COST TO CUSTOMERS.**

10 **A.** PNM actively manages its capital projects to ensure that the projects are completed
11 at the lowest reasonable cost and within budget. PNM’s Generation group reviews
12 the status and forecast of the capital budget during monthly meetings between the
13 Managing Director of Generation, Plant Directors, Department Directors, and
14 Generation Engineering Director. Luna has additional budget reviews on a monthly
15 basis among the facility’s owners. The goals of these reviews are to monitor the
16 investments at the facility and make sure that expenditures are reasonable,
17 necessary, within the budgeted amount and on schedule.

18

19 **Q.** **IS FLEXIBILITY SOMETIMES REQUIRED WITH RESPECT TO THE**
20 **IMPLEMENTATION OF PROJECTS?**

21 **A.** Yes, it is. Although PNM strives to meet its forecasted in-service dates for
22 generation capital projects, flexibility in the specific projects to be completed is
23 necessary to manage unforeseen events and unbudgeted expenses that might arise

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1 during the year. For instance, an equipment failure can divert the resources of the
2 engineering and project management staff from on-going projects and require the
3 commitment of unbudgeted expenditures to ensure the continuous supply of power
4 to customers. Projects and associated expenditures therefore cannot always be
5 completed in the timeframe originally forecasted. A process is in place for
6 managing quarterly changes, or “trade-offs” to ensure the funding of necessary, but
7 unbudgeted, capital expenditures while not exceeding the approved capital
8 allowance. The process requires documentation of the need for the new
9 expenditure, the identification of a budgeted project expenditure that will be
10 reduced to accommodate the new expenditure, and proper approvals.

11

12 **Q. HOW DOES PNM GENERATION MINIMIZE THE ENVIRONMENTAL**
13 **IMPACTS OF CAPITAL PROJECTS?**

14 **A.** PNM seeks to minimize the environmental impacts of capital projects through its
15 Environmental Management System (“EMS”), which is based upon the Company’s
16 Environmental Policy and the international ISO 14001 standard for Environmental
17 Management Systems. The overall goal of the EMS is to ensure continuous
18 improvement in the Company’s environmental performance and foster an
19 environmental stewardship ethic on a Company-wide basis. The foundation of the
20 EMS is the Environmental Screening Process. Before field work or new projects
21 begin, PNM employees screen their activities to identify potential issues associated
22 with compliance requirements and resource protection. These issues include
23 federal, state and local jurisdictional requirements and permitting; habitat and

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1 threatened and endangered species; water and riparian area sensitivities; and
2 cultural resources. When a potential issue is identified through the Environmental
3 Screening Process, work will not proceed until an environmental clearance
4 containing adequate and appropriate precautions, stipulations and permits has been
5 issued. The Company also requires regular comprehensive environmental training
6 for operational employees and some contractors at least every two years.

7

8 **Q. PLEASE DESCRIBE THE CAPITAL BUDGET PROCESS USED FOR**
9 **FOUR CORNERS AND PALO VERDE WHERE PNM IS NOT THE PLANT**
10 **OPERATOR.**

11 **A.** As discussed above, APS is the operating agent for both Four Corners and Palo
12 Verde. Like PNM, APS follows a rigorous process to determine project
13 prioritization, cost estimates and funding levels. APS presents the capital plans for
14 Palo Verde and Four Corners to the respective ownership groups for each plant.
15 The ownership groups are comprised of a voting member from each owner in that
16 plant. The owners scrutinize APS's plans, seek information and provide input on
17 the proposed budgets. The final annual capital budgets are then put to a vote of
18 each facility's owners. Once the capital budgets have been approved by the owners,
19 PNM is contractually obligated to pay for its share of the capital costs.

20

21 **Q. WHAT IS THE PROCESS FOR MONITORING CAPITAL**
22 **EXPENDITURES AT FOUR CORNERS AND PALO VERDE?**

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1 **A.** Capital expenditures are monitored at each of these facilities through budget
2 reviews that are held on a monthly basis. The goals of these reviews are to monitor
3 the expenditures of each plant and make sure that they are reasonable, necessary
4 and within the expected amounts. Unforeseen circumstances can result in scope
5 changes that can cause cost variances and lead to changes to work schedules.
6 Appropriate efforts are made to help ensure that the project costs remain on target
7 and within the overall budget.

8

9 **Q. IS THE PROCESS FOR MONITORING AND APPROVING CAPITAL**
10 **EXPENDITURES AT FOUR CORNERS AND PALO VERDE**
11 **REASONABLE?**

12 **A.** Yes. As a minority owner of these plants, PNM uses this process to review and
13 monitor the decisions made by APS as operator of these plants. The active
14 participation by all owners in the capital development and budget processes ensures
15 that capital projects that are undertaken are required to ensure plant operations are
16 safe and reliable and that the costs are reasonable.

17

18 **Q. DOES PNM HAVE ANY BUDGETING OBLIGATIONS AT FACILITIES**
19 **THAT PROVIDE POWER TO PNM PURSUANT TO A PPA OR ESA?**

20 **A.** No. The costs borne by customers through PPAs or ESAs are contractually arranged
21 and set pursuant to the terms and conditions within each agreement.

22

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1 **IV. PNM’S GENERATION CAPITAL INVESTMENTS**

2 **Q. WHAT TOPICS DO YOU ADDRESS IN THIS SECTION OF YOUR DIRECT**
3 **TESTIMONY?**

4 **A.** I discuss PNM’s capital investment plan for generation facilities during the Capital
5 Investment Period and summarize the benefits of, and justification for, these
6 investments. In addition, I show how the investments were projected and that the
7 amounts are reasonable forecasts of the level of investment needed through the end
8 of the Capital Investment Period.

9
10 **Q. CAN YOU DESCRIBE THE GENERATION CAPITAL PROJECTS**
11 **CONTAINED IN THIS RATE CASE REQUEST?**

12 **A.** Yes. As discussed above, PNM has identified six core operational value drivers to
13 categorize each capital project in this rate case: (1) Safety; (2) Environmental; (3)
14 Reliability; (4) Security; (5) Compliance and (6) System Performance. Although a
15 given project might fall under one or more of these categories, the primary
16 designation of PNM Generation’s capital projects during the Capital Investment
17 Period falls under one of the six categories just described.

18
19 **Q. WHAT IS THE TOTAL PNM GENERATION CAPITAL INVESTMENT**
20 **DURING THE CAPITAL INVESTMENT PERIOD?**

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1 **A.** PNM’s total Generation capital investments during the Capital Investment Period
2 are \$180.6 million. PNM Table RBH-7 shows the total investments for each of the
3 six value driver categories identified above.

**PNM Table RBH-7
Capital Costs by Operational Value Driver
For the Capital Investment Period**

Driver	Exhibit	Count	Percentage	Amount
Safety	PNM Exhibit RBH-2	19	7.40%	\$ 13,366,722
Environmental	PNM Exhibit RBH-3	4	0.87%	\$ 1,573,395
Reliability	PNM Exhibit RBH-4	43	27.76%	\$ 50,127,546
Security	PNM Exhibit RBH-5	2	0.67%	\$ 1,218,106
Compliance	PNM Exhibit RBH-6	13	59.13%	\$ 106,765,593
System Performance	PNM Exhibit RBH-7	8	4.16%	\$ 7,519,283
		89	100%	\$ 180,570,646

7
8 PNM Table RBH-8 shows PNM’s capital investments during the Capital
9 Investment Period applicable to each of PNM’s owned or partially-owned
10 generation resources.

**PNM Table RBH-8
Capital Costs for Generation Resources
For the Capital Investment Period**

Row Labels	Grand Total
Afton	\$ 10,290,312
Four Corners	\$ 47,773,417
Generation Distribution	\$ 22,772,526
Generation Engineering	\$ 5,302,224
Generation HQ - Aztec	\$ 461,336
La Luz	\$ 3,585,105
Lordsburg	\$ 2,787,951

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Row Labels	Grand Total
Luna	\$ 13,265,576
Palo Verde	\$ 58,217,280
Reeves	\$ 4,961,762
Renewables	\$ 225,862
Rio Bravo	\$ 3,820,923
Wholesale Power Marketing	\$ 7,106,372
Grand Total	\$ 180,570,646

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A. Safety Enhancement Projects

Q. PLEASE DESCRIBE THE TYPE OF PROJECTS INCLUDED IN THE SAFETY ENHANCEMENT CATEGORY.

A. This category of investment contains the capital additions for maintaining and enhancing the safety of PNM’s existing generation plant or facilities. More specifically, these projects will result in expected safety improvements or mitigate existing safety risks or the possibility of damage to public property, thereby enabling PNM to meet applicable safety standards. As indicated in PNM Table RBH-9 below, the total investments in this category amount to \$13,366,722 during the Capital Investment Period. The projects highlighted below account for 53.78% of the total dollar amount of capital additions in this category. The remaining 46.22% are presented in PNM Exhibit RBH-2.

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- **Rio Bravo – Gas Turbine Generation Outage (ID# 04616221):** Routine inspections of the Rio Bravo Gas Plant’s combustion turbine and systems are required based on the number of unit starts. The number of starts is defined by the maintenance contract for the plant. Based on historical start data, a combustion inspection will need to be performed, the inspector will provide the labor and technical support and PNM will provide the necessary spare parts.
- **Reeves Station – Unit 3 Turbine and Generator Outage (ID# 71316624):** This project will replace the major capital parts in the turbine generator during the 2024 major outage. Steam erosion during plant operation wears on the stationary and rotating components over time, which requires replacement during major outages. Major capital replacements include, but are not limited to: blade rings, bearings, nozzle blocks, and seals in the low-pressure and high-pressure sections of the turbine’s rotor. The generator will require electrical testing to identify stator and rotor windings integrity. PNM Engineering will coordinate the project schedule, inspections, installation, and cost.
- **Afton – Hot Gas Path 2022 (ID# 70716122):** The 7FA gas turbines (GTs) require major maintenance (overhauls) at set intervals based on factored starts and running hours. The Afton GT will reach its predetermined running hours necessitating a major overhaul in the spring of 2022

**PNM Table RBH-9
Capital Costs for Safety Project**

Category	Project #	Budget	Project Name
Safety	04616003	\$ 368,698	Rio Bravo Exhaust Duct System Upgrade
Safety	04616221	\$ 2,789,917	2022 Rio Bravo GT Gen Outage
Safety	04616324	\$ 359,601	Rio Bravo Hydrogen Generator
Safety	35730923	\$ 49,955	23-01 Aztec Building A Contingency
Safety	35730924	\$ 48,856	24-01 Aztec Building A Contingency
Safety	70716122	\$ 3,099,560	Afton Hot Gas Path 2022
Safety	70716124	\$ 78,807	AFT Annual Safety Imprvmt 2024
Safety	70716223	\$ 109,811	Afton "H" ACC Fan Blade Repl 2023
Safety	70716321	\$ 295,105	AFT 21-03 Alarm System Upgrade

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Category	Project #	Budget	Project Name
Safety	70716622	\$ 39,285	AFT Annual Safety Imprvmts 2022
Safety	70716823	\$ 74,909	AFT Annual Safety Imprvmts 2023
Safety	70717022	\$ 1,890,658	Afton Rotor Replacement 2022
Safety	70717923	\$ 149,769	Afton Bulk Low Pressure Hydrogen Storage Tank Project
Safety	70730523	\$ 109,830	Afton Yard Lighting Project
Safety	71316023	\$ 69,904	RGS U1&2 Cooling Tower Acid Tank
Safety	71316624	\$ 1,298,538	U3 Turbine and Generator Outage
Safety	71316822	\$ 299,672	U3 Motor Control Ctrs, Strt, and Br
Safety	74416222	\$ 118,016	Luna Hot Gas Path 2022
Safety	74417024	\$ 2,115,831	Luna Capital Planned Outage 2024
		\$ 13,366,722	

Items in **bold** on this table are discussed in detail above.

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B. Environmental Projects

Q. PLEASE DESCRIBE THE TYPE OF PROJECTS INCLUDED IN THE ENVIRONMENTAL CATEGORY.

A. This category of investment contains the capital additions necessary to ensure PNM’s compliance with federal and state environmental laws and regulations, including permitting requirements. For example, refurbishment of equipment or replacement of air monitoring equipment, evaporation ponds, landfill, and pollution control equipment needed to ensure continuing compliance are included in this category. As indicated in PNM Table RBH-10 below, the total investment in this category amounts to \$1,573,395 during the Capital Investment Period. The projects

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1 highlighted below account for 17.45% of the total dollar amount of capital additions
2 in this category. The remaining 82.55% are presented in PNM Exhibit RBH-3.

- 3 • **Rio Bravo – Replace CEM O2 and NOX Analyzers (ID# 4616024):** The
4 current nitrogen oxide (NOx) and oxygen (O2) analyzers are at the end of
5 their lifecycles and need to be replaced. The NOx analyzers measure oxides
6 of nitrogen derived from the gas fuel being burned by the turbine system.
7 Combustion at high temperatures allows the reaction of nitrogen and
8 oxygen atoms to combine to create nitric oxide (NO) and nitrogen dioxide
9 (NO2). The O2 analyzer measures oxygen in the fuel being burned. The
10 upgrade will ensure the continued accurate NOx and O2 gas monitoring to
11 meet federal and state emissions regulations.
12
- 13 • **Afton – Ammonia and NOX Analyzers (ID# 70717123):** This project will
14 install ammonia and NOx analyzers to improve ammonia injection. The
15 Selective Catalytic Reduction (SCR) ammonia injection is currently dosed
16 by historical amounts, which can lead to over-injection. This ammonia and
17 NOx analyzer will provide a feedback loop to enable injecting the optimal
18 amount of ammonia. This will lead to longer catalyst life, minimize Heat
19 Recovery Steam Generator cleaning for ammonia crystallization, save
20 costs, and reduce ammonia usage. The project will include an upstream
21 NOx analyzer and downstream ammonia analyzer. This system does not
22 currently exist, and the project will include the necessary engineering
23 procurement and installation of these new analyzers.
24

25 **PNM Table RBH-10**
26 **Capital Costs for Environmental Projects**

Category	Project #	Budget	Project Name
Environmental	04616024	\$ 74,921	RB CEM O2 and NOX Analyzers
Environmental	70717123	\$ 199,694	AFT Ammonia and NOx Analyzer
Environmental	70717125	\$ 799,094	AFT Reline NE Pond
Environmental	71316614	\$ 499,687	Reeves Common Evap Pond Reline
		\$ 1,573,395	

27 Items in **bold** on this table are discussed in detail above.
28

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1 *C. Reliability Enhancement Projects*

2 **Q. PLEASE DESCRIBE THE TYPE OF PROJECTS INCLUDED IN THE**
3 **RELIABILITY ENHANCEMENT CATEGORY.**

4 **A.** This category of investment contains the capital additions for maintaining and
5 enhancing the reliability of PNM’s existing generation plant. For example, the
6 replacement of equipment reduces the occurrence of unplanned outages and helps
7 to maintain a high reliability factor, which reduces the need for higher cost
8 replacement energy. As indicated in PNM Table RBH-11 below, the total
9 investment in this category amounts to \$50,127,546 during the Capital Investment
10 Period. The projects highlighted below account for 54.86% of the total dollar
11 amount of capital additions in this category. The remaining 45.14% are similar in
12 nature and are presented in PNM Exhibit RBH-4.

- 13 • **La Luz - Turbine Control Upgrades (ID# 75216125):** The scope of the
14 project will include the replacement of Link Net-HT nodes, the P1020
15 central processing unit (CPU), and all cables for internal cabinet wiring,
16 termination tee, and Controller Area Network (CAN) open accessories. The
17 upgrade will also include a new Human-Machine Interface (HMI) local and
18 remote computer, which will operate on Windows 10. If any of the system
19 components fail, it will take several weeks to obtain and install spare parts,
20 if they can be found. All necessary hardware, software, licenses and
21 engineering will be provided. PNM Engineering will secure contracts to
22 purchase and install the upgrades.
- 23 • **Wholesale Power Marketing – Energy Storage and Scheduling**
24 **Optimization (ID# 70028021):** This project will implement a centralized
25 control system that manages the numerous battery energy storage systems
26 (BESS) currently being constructed on PNM’s grid. The project will lower
27 costs by reducing curtailments on renewable resources, reduce peak load by
28 discharging batteries, and maximize revenue via energy imbalance market
29 (EIM) participation.
- 30 • **Lordsburg - Outage Project (ID# 70316119):** This project covers the
31 replacement of capital assets at Lordsburg to maintain and ensure ongoing
32 and
33 ongoing

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1 safe, compliant, efficient, and reliable operation of the plant in 2023.
2 Common types of capital improvements covered by this project include
3 various smaller capital assets like pumps, control system components,
4 structural platforms, and spill-containment systems necessary to operate the
5 plant. This project includes required control system upgrades to the GE gas
6 turbines to maintain support and operability.
7

- 8 • **Afton – Fogger #4 Pump Replacement (ID# 70717321):** Fogger pump #4
9 is the largest positive displacement pump on a four-pump inlet fogging skid
10 that is used to pump demineralized water at 3000 psi from the pumping skid
11 to spray nozzle manifolds located in the air duct downstream of the filter
12 housing. While gas turbines are very efficient power-generation systems,
13 when the weather gets hot, they lose power output. By mechanically chilling
14 the inlet air before it enters the compressor, this output drop can be avoided.
15 When all four fogger pumps are operating, an additional 16.5 MW can be
16 provided. When fogger #4 is not operating, the unit derates 10 MW.
17
- 18 • **Distribution Generation - Distribution Battery Expansion Project (ID#**
19 **70518222):** Subject to Commission approval, PNM will purchase, own, and
20 install 12 MW of battery energy storage systems (BESS) that will be spread
21 across existing PNM solar facility sites located on PNM distribution
22 feeders. The BESS will be installed on the PNM distribution feeders with
23 the highest constraints in an effort to alleviate constraints on these feeders.
24 This project has many purposes, including addressing resource adequacy
25 issues, providing distribution support on certain constrained feeders,
26 addressing feeder limitations, improving voltage control on feeders, and
27 increasing solar hosting capacity.
28
29

**PNM Table RBH-11
Capital Costs for Reliability Projects**

Category	Project #	Budget	Project Name
Reliability	04616122	\$ 73,999	RB Admin UPS Replacement
Reliability	04616124	\$ 49,946	RB Compressor Bleed Valves
Reliability	35730521	\$ 166,290	21-01 Aztec Building A Boiler Repla
Reliability	35730522	\$ 196,235	Aztec HVAC Chiller Replacement
Reliability	70016023	\$ 150,255	Solar / BESS Eng Ctrl Comm and Station - Aztec
Reliability	70028021	\$ 3,092,240	Energy Storage and Scheduling Optimization System (Battery Integration)
Reliability	70028022	\$ 496,218	OSI Soft Enterprise Software/License
Reliability	70028122	\$ 497,807	Battery Integration/Renewable forecasting upgrades

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Category	Project #	Budget	Project Name
Reliability	70316023	\$ 1,500,054	Standardize Control Systems to Ovation
Reliability	70316119	\$ 998,442	Lordsburg Outage Project
Reliability	70316524	\$ 119,676	Lordsburg Cap Planned Outage 2024
Reliability	70317923	\$ 84,869	Lordsburg Capital Improvements 2023
Reliability	70317924	\$ 84,910	Lordsburg Capital Improvements 2024
Reliability	70518222	\$ 22,274,720	Distribution Battery Expansion Project
Reliability	70534023	\$ 149,494	PNM Renewable Sites Capital Repl 20
Reliability	70534024	\$ 150,292	PNM Renewable Sites Capital Repl 20
Reliability	70716222	\$ 40,000	Afton Cooling Tower #1 Fan Motor Replacement
Reliability	70716224	\$ 199,781	AFT Plant HVAC Upgrades 2024
Reliability	70716323	\$ 219,661	AFT (GT) Gas Turbine Thermocouples/Thermowells
Reliability	70716625	\$ 119,816	AFT Air Inlet Filter Replacement
Reliability	70716723	\$ 109,829	AFT Replace (ACC) Air Cooled Condenser Fan Gearboxes
Reliability	70716822	\$ (35,601)	Afton Burner Management System Upgrade
Reliability	70716922	\$ 86,081	Afton Plant HVAC Upgrades 2022
Reliability	70716923	\$ 49,934	AFT Plant HVAC Upgrades 2023
Reliability	70717023	\$ 40,020	AFT DM Plant (RO) Reverse Osmosis Membrane Repl
Reliability	70717223	\$ 124,810	AFT Well Pump on Production Well
Reliability	70717321	\$ 787,193	Afton Fogger #4 Pump Replacement
Reliability	70717423	\$ 149,815	AFT Automated Wastewater System
Reliability	70717723	\$ 64,900	Afton Lube Oil Vacuum/Filtration Skid
Reliability	71316024	\$ 349,607	RGS U3 Recoat Circ Water Pipe
Reliability	71316124	\$ 249,728	Reeves U3 Boiler Waterwall Repl
Reliability	71316322	\$ 75,358	RGS U2 GSU Diff Relay Upgrade
Reliability	71316422	\$ 1,838,855	Reeves U1 Cooling Tower Fill and St
Reliability	71316722	\$ 160,567	U3 Generator Excitation System
Reliability	71316923	\$ 119,846	Reeves GS U2 GSU Relay Upgrade

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Category	Project #	Budget	Project Name
Reliability	74416022	\$ 197,737	Luna Capital Improvements 2022
Reliability	74416023	\$ 3,724,447	Luna Capital Improvements 2023
Reliability	74416026	\$ 3,504,393	Luna Capital Improvements 2024
Reliability	74417022	\$ 1,504,564	Luna Capital Planned Outage 2022
Reliability	74417123	\$ 1,900,882	Luna Capital Planned Outage 2023
Reliability	75216125	\$ 349,458	La Luz Turbine controls Upgrade
Reliability	75216221	\$ 2,736,185	La Luz Spare GSU Transformer
Reliability	75516021	\$ 1,374,232	Solar Com Project
		\$ 50,127,546	

Items in **bold** on this table are discussed in detail above.

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D. Security Projects

Q. PLEASE DESCRIBE THE TYPE OF PROJECTS INCLUDED IN THE SECURITY CATEGORY.

A. This category includes capital investments that PNM will make at Afton during the Capital Investment Period. Afton has two capital projects to ensure maintainability, reliability, and security. The first project is the new Afton Human-Machine Interface (HMI) upgrade that will refresh the out of date and unsupported Windows 7 based computers which will improve the ability to control, backup, and secure the system. The second project is an upgrade to the Unit 1 Turbine Mark VI-E Control Platform which will replace its out of date and unsupported components with new upgraded controllers, cybersecurity and original equipment manufacturer support. A detailed description of each of these projects can be found in PNM Exhibit RBH-5.

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**PNM Table RBH-12
Capital Costs for Security**

Category	Project #	Budget	Project Name
Security	70716523	\$ 219,658	AFT HMI Upgrade
Security	70716623	\$ 998,448	AFT U1 Turbine MARK VIE Major Cntr
		\$ 1,218,106	

2

3

E. Compliance

4 **Q.**

PLEASE DESCRIBE THE TYPE OF PROJECTS INCLUDED IN THE COMPLIANCE CATEGORY.

5

6 **A.**

This category of investment contains the capital additions for complying with regulatory laws, policies, and regulations. The total investment in this category amounts to \$106,765,593 during the Capital Investment Period. A detailed description of these projects can be found in PNM Exhibit RBH-6.

9

10

11

A large portion of the Compliance projects is attributed to Four Corners and Palo Verde. PNM aggregates multiple capital projects from Four Corners and Palo Verde under a single Facilities Improvements umbrella or “blanket” project for accounting purposes, based on project information provided by APS, the plant operator. Included in these Improvements capital blanket projects are multiple projects targeting reliability, safety, regulatory and environmental compliance that have been selected by APS and approved by the owners.

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19

PNM has identified the projects included in the Capital Investment Period as Compliance, although in most instances a given project provides other benefits.

20

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1 Generally, investments at Four Corners and Palo Verde are necessary to meet
2 regulatory compliance, safety, and reliability. Please see PNM Table RBH-13
3 below for a listing of projects.

4

**PNM Table RBH-13
Capital Costs for Compliance Projects**

Category	Project #	Budget	Project Name
Compliance	04616023	\$ 51,920	Rio Bravo PDC Battery Replacement
Compliance	04616123	\$ 51,920	Rio Bravo PECC Battery Replacement
Compliance	70716424	\$ 91,949	Afton PDC Battery Replacement
Compliance	70717823	\$ 79,646	Afton PECC Battery Replacement
Compliance	71519017	\$ 44,476,525	Four Corners Facility Improvements
Compliance	71519117	\$ 1,441,181	Four Corners Facility - Switchyard
Compliance	71519210	\$ 1,855,710	Four Corners Facility Improvements
Compliance	72123410	\$ 4,968,855	PV U1
Compliance	72223410	\$ 16,762,456	PV U2
Compliance	72323410	\$ 16,929,010	PV U3
Compliance	72423410	\$ 12,611,780	PV Common
Compliance	72523410	\$ 6,945,179	PV water reclamation
Compliance	75216024	\$ 499,461	La Luz Replace SCR Catalysts
		\$ 106,765,593	

5

6 Examples of projects from Four Corners include:

7

1. Baghouse system replacements:

8

a. Bag replacements

9

b. Booster fan replacements

10

c. Reverse air damper replacements

11

d. Baghouse motor protective relay replacements

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- 1 2. Selective Catalytic Reduction systems
- 2 a. Catalyst replacements
- 3 b. Expansion joint replacements
- 4 3. Motor replacements
- 5 4. Valve replacements

6 Examples of projects from Palo Verde include:

- 7 1. Fire protection system upgrades
- 8 2. Valve replacements
- 9 3. Pump replacements
- 10 4. Motor replacements
- 11 5. Generator rewind

12

13 ***F. System Performance***

14 **Q. PLEASE DESCRIBE THE TYPE OF PROJECTS INCLUDED IN THE**
15 **SYSTEM PERFORMANCE CATEGORY.**

16 **A.** Projects in this category improve the overall efficiency, operation, or performance
17 of the technical or business systems for all of Generation. As indicated in PNM
18 Table RBH-14, the total investment in this category amounts to \$7,519,283 during
19 the Capital Investment Period. The projects highlighted below account for 75.12%
20 of the total dollar amount of capital additions in this category. The remaining
21 24.88% are similar in nature and are presented in PNM Exhibit RBH-7.

22

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- 1 • **Wholesale Power Marketing – Uninterruptable Power Source**
2 **Replacement (ID# 3573072):** Replacement of the two existing
3 Uninterruptable Power Source (UPS) units at the Wholesale Power
4 Marketing (WPM) operations location is required. The current units have
5 exceeded their useful life as recommended by the manufacturer and
6 validated by a recent third-party facility assessment. The UPS units are
7 critical to WPM operations, and the project scope will include
8 improvements to all supporting infrastructure
9
- 10 • **Generation Engineering - Asset Management Engineering Tools (ID#**
11 **70528020):** This project purchases and configures hardware and software
12 specifically designed to implement and optimize asset management
13 practices and strategies into multiple PNM business systems, including the
14 maintenance management system, document management systems and real
15 time systems.
16

**PNM Table RBH-14
Capital Costs for System Performance Projects**

Category	Project #	Budget	Project Name
System Performance	35730721	\$ 645,885	21-03 UPS Replacements for WPM
System Performance	70028222	\$ 256,374	IRP Nodal Production Cost Modeling
System Performance	70028323	\$ 491,807	ICCP Upgrade/Replacement
System Performance	70528020	\$ 5,002,439	Asset Management Engineering Tools
System Performance	70528040	\$ 225,862	Renewable Forecasting System
System Performance	70717523	\$ 97,849	Afton Sys One Vibration Analysis
System Performance	73128124	\$ 199,707	2023 Gas Management Solutions-Luna JOU Upgrade
System Performance	73128224	\$ 599,360	Emerging Market Tool
		\$ 7,519,283	

Items in **bold** on this table are discussed in detail above.

18
19

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1 ***G. Capital Projects Less than \$25,000***

2 **Q. CAN YOU DISCUSS OTHER CAPITAL PROJECTS INCLUDED IN THE**
3 **CAPITAL INVESTMENT PERIOD THAT ARE BELOW \$25,000.**

4 **A.** Yes. PNM Exhibit RBH-8 provides a listing of capital projects included in the
5 Capital Investment Period that are below \$25,000. Because of the nature and
6 relatively small project dollars for these types of projects, PNM does not require
7 the same level of capital budget documentation for these projects that it does for
8 larger projects. Project management teams are responsible for monitoring and
9 reviewing costs to ensure that they are reasonable.

10
11 ***H. Sale of PVNGS Assets to SRP***

12 **Q. HAS PNM INCURRED COSTS RELATED TO CAPITAL**
13 **IMPROVEMENTS FOR THE 114 MW PVNGS LEASED INTEREST THAT**
14 **IS BEING SOLD TO THE SALT RIVER PROJECT AGRICULTURAL**
15 **IMPROVEMENT AND POWER DISTRICT (“SRP”)?**

16 **A.** Yes. As one of the owners of PVNGS, PNM is obligated under the Arizona Nuclear
17 Power Project Participation Agreement (“ANPP Agreement”), originally dated
18 September 1, 1973, with the Reformed Copy inclusive of Amendments 1-16, dated
19 April 28, 2014, to pay its assigned share for necessary capital improvements, based
20 on the percentage of capacity that PNM owns or controls. Certain capital
21 improvements are PNM-owned assets that are being sold to SRP.

22

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1 In addition, under the terms of the PVNGS leases as approved by the Commission,
2 PNM is also obligated to pay for necessary capital costs associated with the capacity
3 leased by PNM. These capital investments were and are necessary for the safe and
4 reliable operation of PVNGS and to comply with applicable requirements related
5 to the operation of a nuclear power plant during the period of the leases. PNM
6 witness Sanders provides the projected undepreciated investments associated with
7 the 114 MW of PVNGS leased capacity.

8

9 **Q. WHAT PVNGS ASSETS ASSOCIATED WITH THE LEASED INTERESTS**
10 **ARE BEING SOLD TO SRP?**

11 **A.** In general terms, these assets consist of PNM’s ownership interests in certain
12 PVNGS switchyard, transmission, “excluded assets” under the PVNGS leases, and
13 nuclear fuel associated with the 114 MW PVNGS interests (collectively “PVNGS
14 Assets”). SRP is acquiring the 114 MW of PVNGS that is currently owned by the
15 lessors and requires the PVNGS Assets for the continued operation of these
16 PVNGS interests.

17

18 This related sale and the specific facilities and fuel interests that will transfer are
19 the subject of the Asset Purchase and Sale Agreement between PNM and SRP.
20 Under the terms of the APSA, PNM is selling the PVNGS Assets at the net book
21 value. The money from the sale of the PVNGS Assets will be credited to PNM
22 customers as described by PNM witness Sanders.

23

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1 **V. PNM’S GENERATION NON-FUEL O&M EXPENDITURES**

2 **Q. WHAT TOPICS DO YOU ADDRESS IN THIS SECTION OF YOUR**
3 **DIRECT TESTIMONY?**

4 **A.** In this section of my direct testimony, I address the PNM Generation O&M
5 expenditures that were incurred in the Base Period to safely and reliably operate
6 PNM’s generation facilities. In particular, I:

- 7 • Describe the process used to establish PNM’s Generation O&M budget and the
8 oversight and management of these expenditures.
- 9 • Confirm the reasonableness of the Generation O&M expenses utilized by PNM
10 witness Sanders in the Test Period; and
- 11 • Describe why it is appropriate to normalize the planned maintenance expenses
12 for certain PNM generation resources.

13
14 **Q. WHAT O&M EXPENDITURES ARE ASSOCIATED WITH PNM’S**
15 **GENERATION FACILITIES?**

16 **A.** PNM’s Generation O&M expenses are the result of the day-to-day cost of safely
17 and reliably operating PNM’s generation resources and expenditures that are
18 required to successfully execute the O&M work completed during scheduled
19 maintenance. O&M expenses in both cases are comprised of several categories.
20 The most significant expenses are the labor and labor-related expenses of the
21 employees and contract workers that operate and maintain PNM’s generation
22 resources as well as those employees in generation support roles.

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1 *A. PNM's Budgeting and Asset Management Process*

2 **Q. WHAT IS THE PROCESS THAT PNM GENERATION USES TO**
3 **ESTABLISH THE O&M BUDGET?**

4 **A.** PNM's O&M budget development is a multi-step process. Staff from each power plant
5 within PNM Generation reviews data from previous years and evaluates known
6 changes. Each plant's staff adjusts the projection based on historical data for
7 known variances, such as scheduled maintenance work, additional contract studies,
8 etc., and inputs this data into PNM's budgeting system and projects forward five
9 years using standard escalation rates for these components. Labor costs were
10 escalated as discussed by PNM witness Pino. Most non-labor costs are escalated as
11 discussed by PNM witness Sanders. Examples of cost categories that are reviewed
12 are staffing levels, payroll (both straight time and overtime), outside services,
13 equipment and materials. PNM's senior management approves the O&M budget.

14

15 **Q. HOW DOES PNM HANDLE O&M BUDGETS FOR GENERATION**
16 **RESOURCES THAT PNM OPERATES AND ARE JOINTLY OWNED**
17 **WITH OTHER PARTIES?**

18 **A.** Luna is the only remaining generation facility that PNM operates and jointly owns.
19 PNM uses basically the same process for Luna that I just described in developing
20 the other PNM O&M budgets. However, the O&M budgets are then presented to
21 the owner representatives for review and approval.

22

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1 **Q. HOW DOES PNM HANDLE O&M BUDGETS FOR GENERATION**
2 **RESOURCES THAT ARE JOINTLY OWNED WITH OTHER PARTIES**
3 **THAT PNM DOES NOT OPERATE?**

4 **A.** The preparation of the O&M budgets at both Four Corners and Palo Verde, which
5 are operated by APS, follow the same rigorous process as described earlier with
6 respect to the APS capital budget process. APS prepares the O&M budget and
7 priorities for both Four Corners and Palo Verde. APS then presents the proposed
8 O&M budgets to each plant's ownership committees for their review. The
9 ownership committees review the budget and provide input as necessary. The final
10 annual O&M budgets are then put to a vote of each facility's owners. Once the
11 O&M budgets have been approved by the owners, PNM is contractually obligated
12 to pay for its share of these costs.

13

14 **Q. HOW DOES PNM GENERATION DEVELOP SCHEDULED**
15 **MAINTENANCE COST ESTIMATES?**

16 **A.** For facilities that PNM operates, PNM Generation personnel develop scheduled
17 maintenance costs by compiling a list of items that need to be addressed during
18 each scheduled maintenance project. Cost estimates are then developed using
19 information related to cost of equipment/materials, any outside support services
20 needed and various other incidental costs that may be incurred during the scheduled
21 maintenance.

22

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1 **Q. HOW DOES PNM MINIMIZE O&M COSTS TO CUSTOMERS?**

2 **A.** PNM actively manages projects to ensure that costs are consistent with budgeted
3 amounts. Of course, some projects will come in above and others below budget.
4 When necessary, PNM finds offsets to ensure that we achieve our overall O&M
5 budget targets for Generation. PNM utilizes its Procurement Team to review market
6 information while competitively sourcing material and/or services to achieve the
7 lowest reasonable cost and best value for customers. PNM utilizes a proactive
8 process of reviews, cost controls, and communication to drive project and site level
9 accountability. This results in a process that meets operational and customer needs.

10

11 **Q. WHAT PROCESS DOES GENERATION USE TO MANAGE O&M COSTS**
12 **AT THE PLANTS WHERE PNM IS THE OPERATOR?**

13 **A.** PNM manages its O&M expenditures by reviewing all aspects of its operations for
14 savings. Management reviews of the O&M budget are held among the Managing
15 Director of Generation, the Plant Directors, the Director of Wholesale Power
16 Marketing, and the Director of Generation Engineering on a monthly and quarterly
17 basis. Appropriate efforts are made to help ensure that the budgets remain on target.

18

19 Luna also has additional budget reviews held among the facility owners. The goal
20 of these reviews is to monitor the expenditures for the facility to make sure that
21 expenditures are reasonable, necessary and within the expected amount.
22 Unforeseen circumstances can result in scope changes that can cause cost variances
23 and lead to changes to the maintenance schedules. As noted previously, PNM

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1 continually attempts to optimize scheduled maintenance as the need for
2 maintenance work emerges at each unit and as work is completed during forced
3 outages.

4

5 **Q. WHAT PROCESS DOES GENERATION USE TO MANAGE O&M COSTS**
6 **AT THE APS OPERATED PLANTS (FOUR CORNERS AND PALO**
7 **VERDE)?**

8 **A.** Budget reviews are held on a regular basis. The goals of these reviews are to monitor the
9 expenditures of each plant and make sure that expenditures are reasonable, necessary and
10 within the expected amounts. Unforeseen circumstances can result in scope changes that
11 can cause cost variances and lead to changes to work schedules. PNM tries to ensure
12 that APS stays within the overall budget. Those budget estimates are compared to
13 the PNM generation budget and balanced for an overall generation budget as
14 reviewed by the Managing Director of Generation, the Plant Directors or Project
15 Manager, the Director of Wholesale Power Marketing, and the Director of Generation
16 Services on a monthly and quarterly basis. Appropriate efforts are made to help ensure
17 that the budgets remain on target.

18

19 **Q. ARE THE O&M EXPENSES FOR FOUR CORNERS AND PALO VERDE**
20 **REASONABLY INCURRED AND PRUDENT?**

21 **A.** Yes. These expenses are necessary to ensure these plants are maintained in working
22 order and operate safely and reliably. The active oversight of all owners in the

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1 planning and budgeting processes ensure that costs are prudent and reasonably
2 incurred.

3

4 ***B. Base Period and Test Year Calculations***

5 **Q. ARE YOU FAMILIAR WITH THE GENERATION O&M EXPENSES**
6 **THAT PNM WITNESS SANDERS USED FOR HIS BASE PERIOD**
7 **CALCULATIONS FOR GENERATION?**

8 **A.** Yes. PNM Witness Sanders used the actual Generation O&M expenditures for the
9 period between July 1, 2021, and June 30, 2022, in developing his Base Period
10 O&M expenses. The expenditures were made in conformity with the O&M
11 budgeting process that I just described and represent necessary actual costs incurred
12 by PNM to continue to safely and reliably operate PNM's generation facilities.
13 Accordingly, they are a reliable and reasonable foundation for PNM witness
14 Sanders' cost of service analysis.

15

16 **Q. WHAT IS YOUR UNDERSTANDING OF HOW THE BASE PERIOD**
17 **GENERATION O&M EXPENSES WERE USED TO DEVELOP THE TEST**
18 **YEAR O&M EXPENSES?**

19 **A.** As explained by PNM witness Sanders, he started with the Base Period Generation
20 expenditures and applied appropriate annual escalation factors to derive his Test
21 Period numbers. He also made certain adjustments, including the removal of San
22 Juan to reflect its abandonment and the removal of costs associated with the

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1 expiration of the 114 MW of Palo Verde leases, that he describes in his direct
2 testimony.

3

4 **Q. ONE OF THE ADJUSTMENTS THAT PNM WITNESS SANDERS SHOWS**
5 **TO ARRIVE AT HIS TEST YEAR O&M EXPENSES WAS TO**
6 **NORMALIZE GENERATION O&M COSTS RELATED TO BASELOAD**
7 **PLANNED POWER PLANT OUTAGES OVER A SIX-YEAR PERIOD. DO**
8 **YOU AGREE THAT SUCH AN ADJUSTMENT PROVIDES A MORE**
9 **REPRESENTATIVE ESTIMATE OF ANNUALIZED GENERATION O&M**
10 **COSTS?**

11 **A.** Yes. Power plants are subject to periodic scheduled outages so that major
12 maintenance can be performed. Outages are typically very cost intensive. Planned
13 major outages at Four Corners typically occur every six years with a planned minor
14 outages every three years per unit. Planned outages at Palo Verde typically take
15 place about every eighteen months on each unit. Because of the varying outage
16 schedules for Four Corners and Palo Verde, the Base Period is not representative
17 of the average major planned outage costs. Therefore, a six-year period was
18 determined to provide the most representative of the average major planned outage
19 costs.

20

21 **Q. ARE THE PLANNED OUTAGE SCHEDULES FOR PNM-OWNED**
22 **NATURAL GAS PLANTS DIFFERENT THAN THE BASELOAD PLANTS?**

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1 **A.** Yes. The PNM-owned gas plants are operated on an as-needed basis and their
2 outage schedules are based on gas turbine operating hours and fired starts, not on a
3 calendar cycle like Four Corners and Palo Verde. Depending on the varying annual
4 capacity factors the gas plants outage periods can range from three to five years.
5 Therefore, a six-year outage period is an appropriate length of time to capture and
6 average the major planned outage costs for the gas plants.

7

8 **Q.** **PLEASE DESCRIBE THE ANALYSIS THAT WAS PERFORMED TO**
9 **DETERMINE THE ADJUSTMENTS THAT PNM WITNESS SANDERS**
10 **UTILIZED.**

11 **A.** For all power plants, PNM Witness Sanders utilized the historical outage expenses
12 incurred during the six-year period from July 1, 2016, through June 30, 2022, to
13 calculate an average outage expense. This is a reasonable adjustment to make in
14 order to derive representative O&M costs to be used for the Test Period. This is
15 the same methodology as was used and accepted in NMPRC Case Nos. 15-00261-
16 UT and 16-00276-UT.

17

18 **Q.** **ARE THE GENERATION O&M COSTS THAT PNM SEEKS TO**
19 **RECOVER IN THIS CASE REASONABLE AND NECESSARY?**

20 **A.** Yes. The estimated O&M expenditures are reasonable because they are based on
21 actual expenditures that were incurred after undergoing a robust budgeting process.
22 They represent costs that are necessary to provide for the operation and
23 maintenance of PNM's generation facilities to ensure that the lowest cost resources

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1 to PNM's customers are available as much as possible rather than having to make
2 more expensive external market purchases of generation. Additionally, because
3 these resources are necessary for the foreseeable future, PNM's customers will get
4 the benefit of a cost-effectively maintained generation fleet.

5

6 **VI. NUCLEAR FUEL COSTS AT PALO VERDE**

7

8 **Q. PLEASE DESCRIBE THE COST OF NUCLEAR FUEL WHICH IS USED**
9 **BY PALO VERDE TO GENERATE ELECTRICITY.**

10 **A.** As part of the operations of Palo Verde, APS purchases, processes and stocks
11 nuclear fuel to be used in the reactors. Palo Verde reloads its reactors with nuclear
12 fuel on a tightly controlled eighteen-month cycle. Once the fuel has been loaded
13 into the reactor, the nuclear process converts the fuel to produce heat. This heat is
14 used to boil water which creates the steam that drives Palo Verde's turbines which
15 in turn drive electric generators. After the eighteen-month cycle, approximately
16 forty percent of the fuel rods will require replacement due to the nuclear fission
17 process. As this is a tightly controlled nuclear reaction, the physical amount of fuel
18 required to run the station is known with great accuracy. This enables very accurate
19 forecasts of the future nuclear fuel requirements.

20

21 APS provides PNM and the other owners with an accounting of the capital costs
22 associated with nuclear fuel. The forecasted capital costs and refueling activity are
23 presented in Rule 530, Schedule B-7 for the Capital Investment Period. At

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1 September 30, 2022, the nuclear fuel capital account balances were \$82.6 million.
2 After taking into account forecasted purchases, refueling and nuclear fuel
3 amortization, the forecasted nuclear fuel capital account balances at the end of the
4 Test Period, December 31, 2024, is \$69.4 million. The forecasted purchases and
5 processing for nuclear fuel reloads are based on information provided by APS.
6 PNM relies on the information from APS to project the nuclear fuel capital
7 requirements. However, PNM does monitor APS's forecasted annual requirements
8 for any significant cost changes. The most recent ten year forecast from APS from
9 2022 through 2032 shows the year-to-year annual nuclear fuel cost changes range
10 from +7.48% to -7.96%. The Test Period nuclear fuel cost increased by 9.96%
11 from the Base Period. This increase falls beyond the APS's 10-year forecast cost
12 range of +7.48% to -7.96% is driven by an increase in fuel purchases in the Test
13 Period to secure fuel supply and avoid issues predicted from supply chain
14 uncertainty and geo-political uncertainty. Years beyond the Test Period costs fall
15 within APS's 10-year cost range.
16
17 PNM witness Sanders addresses nuclear fuel amortization related to nuclear fuel
18 inventory balances.
19

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VII. FOUR CORNERS PRUDENCE

Q. WHAT DO YOU ADDRESS IN THIS SECTION OF YOUR TESTIMONY?

A. I support the necessity for and reasonableness of PNM’s capital investments and other expense in Four Corners for purposes of any prudence review of Four Corners in the case. PNM witness Graves addresses the prudence of PNM’s past actions with respect to Four Corners.

As discussed above, Four Corners is a certificated resource and is currently needed to serve customers’ energy needs. As also discussed above, capital investments and operating costs at Four Corners are subject to a rigorous review and approval process by all of the owners. There is also strict oversight of capital projects and operating costs to ensure that they are implemented in a cost-effective manner.

Q. PLEASE ELABORATE ON THE TYPE OF INVESTMENTS NECESSARY FOR FCPP OPERATIONS.

A. The projects included in the Capital Investment Period are categorized as Compliance, although it is very likely that a given project provides other benefits. Generally, FCPP investments are necessary to meet regulatory and environmental compliance, safety, and reliability.

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1 **Q. HOW HAS PNM ACCOUNTED FOR AND TRACKED THE FCPP**
2 **CAPITAL INVESTMENTS IN THE CAPITAL INVESTMENT PERIOD?**

3 **A.** PNM aggregates multiple capital projects from Four Corners under a single
4 Facilities Improvements umbrella or “blanket” project for accounting purposes,
5 based on project information provided by the plant operator. Included in these Four
6 Corners Facility Improvements capital blanket projects are multiple projects
7 targeting reliability, safety, regulatory and environmental compliance that have
8 been selected by APS and approved by the owners.

9
10 **Q. IS PNM’S SHARE OF THE COSTS FOR THE FCPP INVESTMENTS**
11 **NECESSARY AND REASONABLE?**

12 **A.** Yes. PNM’s share of Four Corners is an existing and certificated base load resource
13 and it is used to cost-effectively and reliably serve PNM’s customers. As I
14 explained above, the capital projects for FCPP serve to meet one, two or all three
15 goals of Compliance, Safety, and Reliability, which are necessary for the continued
16 operation of FCPP. Likewise, as discussed above, PNM’s share of the O&M costs
17 related to FCPP are necessary and reasonable.

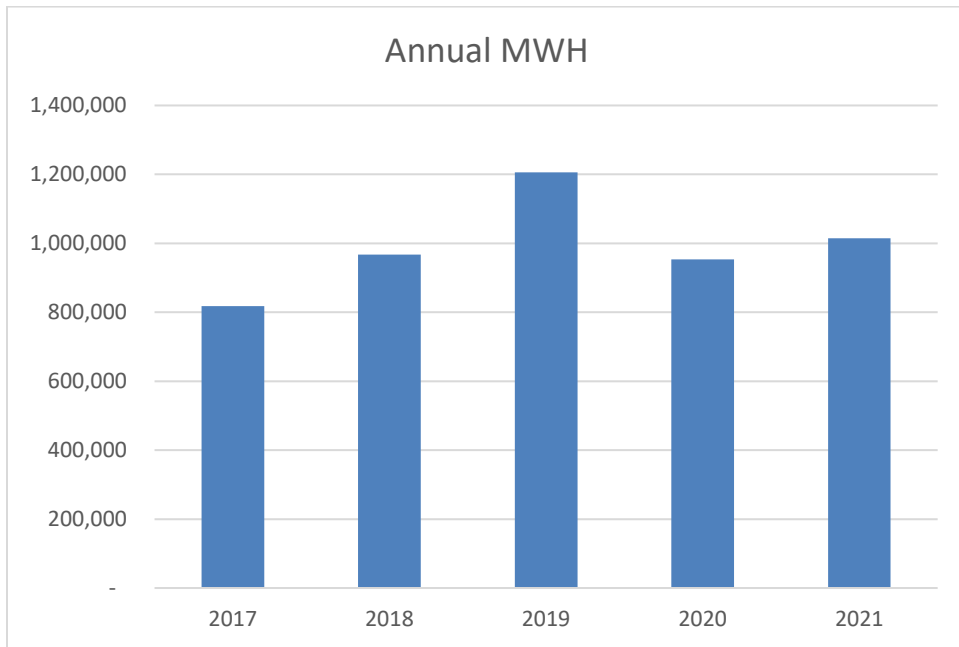
18
19 **Q. HAVE PNM’S CUSTOMERS BENEFITED FROM THESE CAPITAL**
20 **INVESTMENTS?**

21 **A.** Yes. FCPP has been a necessary and integral part of PNM’s generation resources
22 needed to serve customers. As discussed above, these investments were both
23 reasonable and necessary for the safe and reliable operation of FCPP. Four Corners

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1 has been able to provide PNM’s customers stable, firm baseload energy and
2 capacity for over 60 years. PNM Table RBH-15 below shows PNM’s share of the
3 overall energy production at Four Corners from 2017 through 2021. In total, Four
4 Corners has supplied PNM’s customers with over 4.95 million MWh of energy
5 since 2017.

6 **PNM Table RBH-15**
7 **Four Corners Power Plant Energy Production**
8



9
10 In addition, customer energy demand varies seasonally. In the summer months,
11 when demand on the system is greatest, Four Corners continued to deliver a
12 consistent production of energy. For example, in 2021 Four Corners had a summer
13 equivalent availability factor of 89.6%, and in the summer of 2022 it had an
14 equivalent availability factor of 93.2%. Four Corners has been a vital part of
15 meeting our customers’ energy needs. Four Corners serves a role in diversifying
16 PNM’s resource portfolio and, therefore, has also been a critical part of providing

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1 for customer needs during extreme weather events such as those in California in the
2 summer of 2020, and the polar vortex experienced in the Southwest in February
3 2021.

4

5 **Q. HAVE THE BENEFITS OF CAPITAL INVESTMENTS RELATING TO**
6 **THE AVAILABILITY OF FOUR CORNERS BEEN PRESENTED IN ANY**
7 **RECENT CASES?**

8 **A.** Yes. The capital investment projects aimed at improving the availability and
9 performance of FCPP will not only enhance the ability of PNM to serve customers,
10 it will also help support the reliability of proposed renewable resources that were
11 presented in Case No. 19-00195-UT.

12

13 The Commission recently rejected PNM's proposed abandonment of Four Corners
14 effective at the end of 2024 in Case No. 21-00017-UT. Thus, for PNM, Four
15 Corners remains a certificated resources that is currently serving PNM's customers
16 and will continue to do so at least through the Test Period. PNM has incurred, and
17 will continue to incur necessary capital costs and O&M costs associated with its
18 continued operation of Four Corners and, therefore, should be authorized to recover
19 all necessary and reasonable costs of these operations. Unless and until the
20 abandonment of Four Corners is authorized, along with approval of necessary
21 replacement resources, Four Corners will be needed to safely and reliably serve
22 PNM's customers.

23

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VIII. REVIEW OF SPECIFIC SAN JUAN PROJECTS

A. Prudence of San Juan Projects from Case No. 16-00276-UT

Q. WHAT DOES PARAGRAPH 9 OF THE MODIFIED REVISED STIPULATION IN NMPRC CASE NO. 16-00276-UT REQUIRE?

A. Paragraph 9 of the Modified Revised Stipulation in NMPRC Case No. 16-00276-UT provides that “PNM shall also make a showing in PNM's next rate case regarding the prudence of Project Nos. 76616418, 76616917, 76617016 and the reasonableness of their costs.” These are San Juan capital projects that were initially planned to address continued plant operations following the retirements of San Juan Units 2 and 3.

Project 76616917 was originally planned to install infrastructure necessary to receive a rental auxiliary boiler. Installing the auxiliary boiler was studied and evaluated, but never implemented as the cost and return were not justified at the time.

Q. WAS PROJECT NO. 76616418 COMPLETED AND WAS IT PRUDENT AND REASONABLE?

A. Yes. Project 76616418 was completed, although a different project number was used for accounting purposes. This project involved retiring equipment on Units 2 and 3 once they were abandoned. The workscope was focused on minimal activities necessary to ensure all environmental risks were minimized, electrical equipment was safely isolated, and fuel handling systems were isolated to Units 2

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1 and 3. This project was reassigned numbers and was executed as Project No.
2 79016118 as part of work required under Exhibit E in the San Juan
3 Decommissioning Agreement. Project 79016118 was estimated to cost PNM
4 \$1,659,927. The actual current costs charged to this project are \$1,421,214, which
5 is slightly less than the original estimated cost. Project 79016118 was prudent and
6 reasonable because it was necessary to mitigate environmental and safety hazards
7 associated with the abandonment in place of Units 2 and 3 while Units 1 and 4 were
8 operating.

9

10 **Q. WAS PROJECT NO. 76617016 COMPLETED?**

11 **A.** Yes. Project 76617016 was completed, although the scope of the project was
12 narrowed when it was determined some portions of the original project were no
13 longer necessary or cost-justified. This project was implemented and included the
14 identification of items/systems that needed modification to keep San Juan Unit 1
15 and Unit 4 running while Units 2 and 3 were abandoned. Several reconfiguration
16 projects were needed to safely and reliably operate the remaining units (1 and 4).
17 The reconfiguration consolidated unit designs in order to reduce cost, maintain
18 redundancy, and reduce risks to each unit's production loss. A third-party
19 engineering firm was used for the design review process to support the decision
20 making and path forward.

21

22 **Q. PLEASE DESCRIBE WHAT TASKS WERE ENCOMPASSED IN**
23 **PROJECT NO. 76617016.**

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1 **A.** Key improvements were the installation of critical steam, electrical, and water cross
2 ties. In addition, an evaluation was performed to determine whether to consolidate
3 key processes including soot blowing air and demineralized water. The project
4 originally consisted of twenty-four different tasks, which were reduced to the
5 following nine tasks after further review:

6

7 *Condensate Make-up and Isolation* - Under a 4 Unit operation, the condensate
8 make-up system was cross-tied to the respective sister units. Work was executed
9 to isolate Units 2 and 3 from receiving make-up water and then Units 1 and 4 were
10 cross-tied for redundancy. This work was performed using existing piping with a
11 valve modification.

12

13 *Auxiliary Steam* - The Units' auxiliary steam system had previously been cross-
14 connected but was not in satisfactory condition to allow adequate steam flow from
15 Unit 1 to Unit 4, and vice versa. Work was performed to allow sufficient flows and
16 pressures to supply auxiliary steam. This included inspection of piping and steam
17 traps. Valve inspection, calibration and replacement was also performed to ensure
18 safe operation across the plant.

19

20 *Raw Water System* - The raw water system was common to the entire plant. Work
21 was performed to isolate service water from entering Units 2 and 3.

22

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1 *Sootblower Compressors* – Units 1 and 2 shared a common air system as did Units
2 3 and 4. Work was performed to run a new line to supply Unit 1 with air from Unit
3 4’s sootblowing air compressors. This allowed the Units 1 and 2 air compressor
4 system to be abandoned. The result was reduced maintenance costs, reduced
5 auxiliary power load, and an increase in unit heat rate.

6
7 *Start-up Boiler Feed Pump* - Units 3 and 4 had a single, electric driven, start-up
8 boiler feed pump. A three-way diverter valve was used to direct flow to the desired
9 unit. Work was performed to remove the three-way valve and isolate Unit 3 from
10 receiving flow from this system.

11
12 *Heating Steam Condensate Return* - Work was performed to ensure the heating
13 steam condensate receiver tanks discharged to area floor drains in a safe condition.

14
15 *Heating Steam Isolation* - Work was performed to isolate the supply side steam
16 from the retired units to prevent back flow into the respective steam drums.

17
18 *Absorber Isolation* – The limestone feed runs from the prep area, through each unit,
19 heading South and terminates on the South side of Unit 1. This feed was capped
20 and isolated at the header to prevent dead legs, servicing Units 2 and 3. The
21 oxidation air blower supply header also takes the same route, and it too was blinded
22 (isolated) at the respective cell legs.

23

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1 *Fire Protection* – Modifications were made to isolate and abandon unnecessary fire
2 protection around the Units turbines.

3
4 Under all nine of the modifications described above, Digital Control System (DCS)
5 and control work was performed to abandon and clean up the controls system,
6 including operator screens, shutting down unused I/O, consolidating controls, etc.
7 Project No. 76617016 was completed in 2018.

8

9 **Q. WHAT WAS PROJECT NO. 76617016 PRUDENT AND REASONABLE?**

10 **A.** Yes. This project was prudent and reasonable because it was necessary to isolate
11 common systems associated with the retirement in place of San Juan Units 2 and 3
12 while Units 1 and 4 were still in operation. The isolation of common equipment
13 addressed safety and reliability issues that arose from the new plant operating
14 configuration.

15

16 **Q. WHAT WAS THE FINAL COST FOR PROJECT NO. 76617016 AND**
17 **WERE THESE COSTS REASONABLE?**

18 **A.** PNM’s portion of the cost for this project was \$622,572. These costs were
19 reasonable for the scope of this project. As discussed by PNM witness Sanders,
20 PNM has excluded the undepreciated investments related to SJGS from the Test
21 Period and therefore none of these investments are included in the Test Period.

22

23

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1 *B. One Time Costs Associated with San Juan Abandonment*

2 **Q. WHAT ONE-TIME COSTS ASSOCIATED WITH THE SAN JUAN**
3 **ABANDONMENT WAS PNM AUTHORIZED TO RECORD A**
4 **REGULATORY ASSET FOR IN CASE NO. 19-00018-UT?**

5 **A.** In NMPRC Case No. 19-00018-UT PNM was authorized to record a regulatory
6 asset for the following (table excerpted from page 28 of the Recommended
7 Decision on PNM’s request for authority to abandon its interest in the San Juan
8 Units 1 and 4 and recover non-securitized costs):

Regulatory Asset	Amortization Period (Years)	Estimated Amount (in Millions)
One-time costs – Obsolete inventory	25	6.3
One-time costs –External legal costs associated with closure of San Juan coal plant	25	1.2
RFP and regulatory approval costs allocated to PPAs	20	0.8

9

10

11 **Q. PLEASE DESCRIBE THE ONE-TIME COSTS ASSOCIATED WITH**
12 **OBSOLETE INVENTORY FROM THE ABOVE TABLE.**

13 **A.** During plant operation, San Juan maintained an inventory balance consisting of
14 tools, spare equipment, and other materials and supplies that were on hand to
15 operate the plant. PNM has taken reasonable efforts to reduce the amount of
16 inventory balances at San Juan. PNM started reducing inventory levels while the
17 plant was operating and has conducted several auctions to sell remaining inventory.
18 PNM has conducted seven auctions to date during the time period of November
19 2021 through October 2022 and PNM plans to conduct two remaining auctions in

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1 December 2022. Netting the inputs for attrition of spare parts and the auction sales
2 of remaining inventory PNM now estimates a remaining balance of \$6.4 million
3 versus the original \$6.3 million estimate will need to be recovered from customers
4 as the result of the abandonment of San Juan for obsolete inventory. Pursuant to
5 the terms of the Financing Order in Case No. 19-00018-UT, PNM will continue to
6 track any additional proceeds received from the remaining auctions and will reduce
7 the regulatory asset associated with the obsolete inventory and true-up the
8 unamortized balance in a future rate case proceeding.

9

10 **Q. PLEASE DESCRIBE THE ONE-TIME COSTS ASSOCIATED WITH**
11 **EXTERNAL LEGAL FEES FROM THE ABOVE TABLE.**

12 **A.** PNM estimated \$1.2 million in external legal costs associated with the closure of
13 San Juan that needed to facilitate the necessary contractual negotiations with the
14 remaining owners over the exit of San Juan and to secure regulatory approval for
15 the abandonment. Although legal matters for the plant closure are not yet complete,
16 PNM has incurred less than \$0.1 million in external legal counsel costs to date and
17 is requesting recovery of these amounts. Initial costs are lower than estimated as
18 the majority of the legal work to date has been able to be performed by in-house
19 legal counsel. Pursuant to the terms of the Financing Order in Case No. 19-00018-
20 UT, PNM will continue to track any additional costs received from any future
21 external costs and will record as a regulatory asset and true-up the unamortized
22 balance in a future rate case proceeding.

23

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1 **Q. PLEASE DESCRIBE THE ONE-TIME COSTS ASSOCIATED WITH THE**
2 **REQUEST FOR PROPOSAL (“RFP”) AND REGULATORY APPROVAL**
3 **COSTS FOR REPLACEMENT RESOURCES FOR SAN JUAN.**

4 **A.** PNM spent considerable time and effort to develop the San Juan replacement
5 resources proposed and litigated in NMPRC Case No. 19-00018-UT and Case No.
6 19-00195-UT. These replacement resources were referred in these cases as
7 Scenario I. The work involved for developing the replacement resources included
8 engaging third party vendors of different replacement technologies, modeling
9 different generation mixes, and determining the optimum replacement resource
10 plan, as well as analyzing and modeling alternative portfolios presented in the
11 replacement resources proceedings.

12
13 PNM originally anticipated allocating these costs between owned generation assets
14 in the portfolio and the PPAs. The costs allocated to the PPAs were requested for
15 recovery as a regulatory asset, as the costs allocated to owned generation assets
16 would have been included as part of the capital cost of those assets. Pursuant to the
17 Commission orders in those cases, the final selected resources were all PPAs, so all
18 of the one-time costs of \$8.9 million incurred are reflected in the regulatory asset.
19 The PNM Table RBH-16 below summarizes the final costs incurred and requested
20 for recovery in this proceeding:

21

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**PNM Table RBH-16
San Juan Regulatory Approval One-Time Costs**

\$ In Millions	Description of Costs
\$ 2.9	Termination Fee from ProEnergy Services LLC
\$ 3.2	Outside Service Costs
\$ 1.5	External Counsel Fees
\$ 0.6	Other Costs, including Labor
\$ 8.3	Total

The termination fee from ProEnergy Services reflects a one-time contract termination fee due pursuant to Amendment 001 – PNM Contract No. 1057666. Recovery of this cost is reasonable because it was necessary to ensure the project could remain available for consideration by the Commission during the course of the replacement proceedings. The regulatory process ultimately extended longer than was originally anticipated in negotiating the period of time in which bidders would honor the pricing and delivery terms for proposed contracts included in the San Juan replacement portfolio.

Outside service costs include the one-time costs for outside consultants’ support in conducting the RFP, the evaluation and selection of successful bidders, modeling the various scenarios presented, and negotiating signed contracts for the replacement resources.

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1 External counsel fees represent costs incurred associated with development and
2 negotiation and execution of agreements related to replacement resources of
3 Scenario 1.

4

5 Other costs include internal labor incurred to support the development and
6 construction of resources. These costs normally would have been capitalized as
7 part of the owned generating assets as they represent capitalizable dollars incurred
8 to develop and implement long-lived assets. Other costs include miscellaneous
9 expenses, including mailing and supplies and materials, and employee related
10 expenses incurred.

11

12 **Q. WHAT IS PNM REQUESTING WITH RESPECT TO THE FOREGOING**
13 **COSTS ASSOCIATED WITH THE ABANDONMENT OF SAN JUAN?**

14 **A.** As discussed by PNM witness Sanders, PNM was authorized to create regulatory
15 assets for the foregoing expenses. PNM is requesting that these costs now be
16 included in PNM's cost of service for recovery in rates.

17

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1

IX. CONCLUSION

2 **Q. DO YOU HAVE ANY CONCLUDING OBSERVATIONS?**

3 **A.** Yes. Generating electricity is a very capital-intensive enterprise. PNM has a
4 portfolio of generation resources that has served its customers well and requires
5 ongoing investments to safely, reliably and efficiently operate in the future. The
6 costs associated with investing in generation resources and operating and
7 maintaining the generation resources that PNM is presenting in this rate case are
8 reasonable and necessary to continue to provide cost-effective, reliable electricity
9 to PNM's customers.

10

11 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

12 **A.** Yes.

GCG#530104

Résumé of Brent Heffington

PNM Exhibit RBH-1

Is contained in the following 1 page.

BRENT HEFFINGTON

EDUCATIONAL AND PROFESSIONAL SUMMARY

Address: Public Service Company of New Mexico
Aztec Facility
2401 Aztec Road NE, Building A
Albuquerque, New Mexico 87107

Position: Managing Director of Generation – December 2020 to present

Previous Positions:

Xcel Energy, Public Service Company of Colorado
Director – Plant Manager Comanche Station – January 2018 to January 2021

Xcel Energy, Southwestern Public Services (SPS)
Senior Operations Manager – July 2015 to January 2018

Xcel Energy
Manager of Technical Resources and Compliance – April 2014 to June 2015

Xcel Energy, Southwestern Public Services (SPS) – April 1994 to April 2014
Maintenance Manager
Plant Supervisor of Technical Services/Engineer
Technical Specialist II
Journeyman Maintenance Mechanic

Education:

Texas Tech University, Bachelor of Mechanical Engineering
Lubbock Christian University, Bachelor of Business Administration
Washington State University, Executive MBA

Safety Enhancement Capital Projects

PNM Exhibit RBH-2

Is contained in the following 38 pages.

Project No: 04616003 Rio Bravo Exhaust Duct System Upgra

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2021

Estimated Completion Date 7/1/2022

Description
The Rio Bravo exhaust stack liner and baffle system is failing due to attachment bolts breaking loose from the exterior support structure. These attachments secure the liner and silencer system to the exterior stack/support and allow for the necessary expansion of the liner. During past outages, extensive man-hours have been spent repairing and re-welding failed attachments in an attempt to stabilize the liner. Recently, these failures have become a safety concern, as broken fasteners and liner material are flying out of the stack and onto the surrounding ground. Additionally, the silencer attachments have failed and two baffles (of five) fell from their location at the top of the stack. Due to the nature and increasing frequency of these attachment failures, engineering recommends a complete replacement of the entire liner and silencer system.

Project Need Justification
The project is needed to ensure the continued reliable operation of Rio Bravo Generation System. Due to the safety nature of the project, continued operation in the current state is not possible. The liner must be repaired or the unit retired.

Project Alternatives
Two alternatives were considered:
1) Attempt to repair the existing liner and baffle system
2) Complete stack replacement

Due to the safety nature of the hardware flying out of the stack, and the failed past attempts to repair the failing fasteners, attempting to continue to repair the fasteners was eliminated as an option. Replacing the entire stack was an estimated \$2.5M endeavor. Replacing the liner and baffle system was the best cost effective option.

Project Estimate Approach
The project went through a Request for Information process and solicited engineering estimates from 3 major vendors prior to the formal bidding process.

Customer Benefit
By completing this project, PNM ensures the safe and continued operation of Rio Bravo. Rio Bravo is utilized as a peaking plant, and it is important that it is available for immediate operation if wind and solar become unavailable.

Primary Value Driver Safety
Safety When velocities in the exhaust duct increase, these failures are turning into a safety concern as broken fasteners and liner material are flying out of the stack and onto the surrounding ground.

Reliability

System Performance

Security

Compliance

Environmental

Project No: 04616221 2022 Rio Bravo GT Gen Outage

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 3/1/2021

Estimated Completion Date 9/1/2022

Description
Routine inspections of the Rio Bravo Gas Plant's combustion turbine and systems are required based on the number of unit starts. The number of starts are defined by the GE (General Electric) maintenance contract for the site. Based on historical start data, a combustion inspection will need to be performed by GE. During this inspection GE will provide the labor and technical support and PNM (Public Service Company of New Mexico) will provide the necessary spare parts.

Project Need Justification
Routine inspections of the combustion turbine and systems are needed to ensure these systems operate as designed by GE. These inspections help identify potential issues that if left unresolved may result in failures that could impact safety, reduce reliability, and/or potentially result in the need to perform more costly repairs in the future.

Project Alternatives
The only other option would be to do nothing. This is not a feasible option as these inspections are needed to ensure the safe and reliable operation of this plant.

Project Estimate Approach
Direct project costs are estimates provided by the vendor based on actual costs to perform similar work in the past. PNM's indirect costs (e.g., project controls, contingency, allowance for funds used during construction, etc.) are estimated based on similar projects performed in the past.

Customer Benefit
By performing this inspection, PNM ensures the combustion turbine and systems are working properly and are able generate electricity in a safe and reliable manner. Furthermore, these inspections can identify other issues that, if repaired, reduce the risk (and associated costs) of future failures.

Primary Value Driver Safety

Safety This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine at the time of failure.

Reliability This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure would result in extensive down time which would negatively impact reliability and would be costly to make the repairs necessary to bring the plant back into service.

System Performance

Security

Compliance

Environmental

Project No: 04616324 Rio Bravo Hydrogen Generator

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
Rio Bravo currently utilizes 3 small 12-pack cylinders that supply the generator with hydrogen. These 12-packs must be physically picked up with a forklift, maneuvered into place, and manually valved in and out each time by plant personnel. Not only are the 12-pack bundles cumbersome, but the process of maneuvering and manually hooking up the piping and valving of an extremely flammable gas has inherent risk. This project will install a hydrogen generator to replace the 12-pack bundles, greatly minimizing accident exposure due to the elimination of handling, maneuvering and valving bundles. There is also an economic advantage to generating hydrogen vs. renting bottles.

Project Need Justification
The project's primary objective is aligned with PNM's goal of proactively identifying and minimizing risk across operations. A secondary economic benefit will also be realized as the cumulative project install costs should be cheaper than cumulative hydrogen rental costs over time.

Project Alternatives
The "do-nothing" alternative of utilizing the existing 12-pack system is undesirable from a safety perspective (e.g., handling explosive gas), an economic standpoint (e.g., expensive rentals), and a reliability standpoint (Rio Bravo is dependent on rental gas availability for operation).

Project Estimate Approach
Estimates are based on direct costs from the installation of a hydrogen generator at the Afton Generating Station.

Customer Benefit
Customer is benefited by PNM's commitment to operate Rio Bravo in a safe, reliable and most economic fashion.

Primary Value Driver Safety
Safety This project will significantly reduce the frequency of handling explosive hydrogen gas cylinders.

Reliability This project will eliminate the reliability of Rio Bravo operations on Hydrogen Gas availability.

System Performance

Security

Compliance

Environmental

Project No: 35730923 23-01 Aztec Building A Contingency

Company: 003 Bulk Power
Location: 357 Bulk Power Building Allocation

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description

Contingency funds provide essential monetary coverage for unplanned, emergency capital improvements without having to rely on trade-off funds from other projects, which may or may not exist. These funds can also be used to cover shortfalls on other facility projects when situations dictate. More specifically, this project ensures the bathrooms at Aztec are Americans with Disabilities Act (ADA) compliant and that the building is suited to meet the needs of the departments that work out of the space.

Project Need Justification

Generally speaking, Aztec is an aged building, therefore, general improvements are needed to support current and future operations. More specifically, this project ensures the bathrooms at Aztec are ADA compliant and that the building is suited to meet the needs of the departments that work out of the space.

Project Alternatives

The only alternative to this project would be to do nothing. Modifications are needed to accommodate the increased usage of the building and to meet the legitimate space needs of the business at Aztec.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

Benefits to customers will be realized as the work efficiency for departments that are key to the performance and reliability of the bulk electric system will improve.

Primary Value Driver

Safety

Safety

Completed projects contribute to improved work conditions for employees and visitors while providing a safe, efficient and updated work environment.

Reliability

System Performance

Security

Compliance

This project ensures the bathrooms at Aztec are ADA compliant.

Environmental

Project No: 35730924 24-01 Aztec Building A Contingency

Company: 003 Bulk Power
Location: 357 Bulk Power Building Allocation

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
Contingency funds provide essential monetary coverage for unplanned, emergency capital improvements without having to rely on trade-off funds from other projects, which may or may not exist. These funds can also be used to cover shortfalls on other facility projects when situations dictate. More specifically, this project ensures the bathrooms at Aztec are Americans with Disabilities Act (ADA) compliant, and that the building is suited to meet the needs of the departments that work out of the space.

Project Need Justification
Generally speaking, Aztec is an aged building therefore general improvements are needed to support current and future operations. More specifically, this project ensures the bathrooms at Aztec are ADA compliant, and that the building is suited to meet the needs of the departments that work out of the space.

Project Alternatives
The only alternative to this project would be to do nothing. Modifications are needed to accommodate the increased usage of the building and to meet the legitimate space needs of the business at Aztec.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Benefits to customers will be realized as the work efficiency for departments that are key to the performance and reliability of the bulk electric system will improve.

Primary Value Driver Safety

Safety Completed projects contribute to improved work conditions for employees and visitors while providing a safe, efficient and updated work environment.

Reliability

System Performance

Security

Compliance This project ensures the bathrooms at Aztec are ADA compliant

Environmental

Project No: 35730924 24-01 Artec Building A Contingency

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	11,676	-	-	11,675	-	-	11,677	-	-	11,677	46,705
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	508	-	-	508	-	-	508	-	-	508	2,032
928: AFUDC Debt	-	-	-	11	-	-	11	-	-	11	-	-	11	44
929: AFUDC Equity	-	-	-	19	-	-	19	-	-	19	-	-	19	76
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	(12,213)	-	-	(12,213)	-	-	(12,215)	-	-	(12,215)	(48,856)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	0	-	-	(0)	-	-	0	0

Project No: 70716122 Afton Hot Gas Path 2022

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2023

Description
7FA gas turbines (GTs) require major maintenance (overhauls) at set intervals based on factored starts and running hours. The Afton GT will reach its predetermined running hours necessitating a Major Overhaul in the spring of 2022. The Hot Gas Path Major Overhaul is comprised of a pre-defined schedule of inspections, capital replacements, and refurbishments. The scope and price are defined in the General Electric (GE) Contractual Service Agreement (CSA), and the work will be contractually performed by GE. This work will include full replacement of all the internal capital parts, including nozzles, buckets, shrouds, transitions, liners, caps, and sleeves. All the internal rotating and stationary components will be examined from the inlet of the machine through the exhaust and auxiliaries. This involves inspection of all the major flange-to-flange components of the gas turbine, which are subject to deterioration during normal turbine operation. This inspection includes previous elements of the combustion and hot gas path inspections, laying open the complete flange-to-flange gas turbine to the horizontal joints, and the removal of all the upper casings, allowing for access to the compressor rotor, stationary compressor blading, and the bearing assemblies. The generator will be removed, fully inspected, tested, and refurbished as necessary.

Project Need Justification
Routine inspections of the combustion turbine and systems are needed to ensure these systems operate as designed by GE. These inspections help identify potential issues that if left unresolved may result in failures that could impact safety, reduce, reliability, and potentially result in the need to perform costly repairs in the future.

Project Alternatives
There are no viable alternatives or minimized scopes that can be considered in-leu of this Major overhaul. 7FA GT reliability is based on a prescribed and specific set of maintenance activities done at pre-defined run times. The alternative is premature retirement of the resource.

Project Estimate Approach
The scope of work directly related to the Afton Combustion Turbine (CT) during the 2022 overhaul will be contractually performed by GE per the CSA. Other work such as cranes, scaffolding, electric, and Quality Assurance/Quality Control (QA/QC) support are analyzed and awarded on cost, safety and workmanship.

Customer Benefit
By performing this inspection, PNM ensures the combustion turbine and associated equipment are working properly and are able generate electricity in a safe and reliable manner through the next 4 years. Furthermore, these inspections can identify other issues that, if repaired, reduce the risk (and associated costs) of future failures.

Primary Value Driver Safety

Safety This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine at the time of failure.

Reliability This project covers the inspection and replacement of essential capital assets including nozzles, buckets, shrouds, transitions, liners, caps, sleeves, and the internal rotating and stationary components from inlet to exhaust that will ensure the reliable operation of the plant.

System Performance This project covers the inspection and replacement of essential capital assets on the CT system and associated controls from inlet to exhaust that help to optimize efficient operation of the plant.

Security

Compliance

Environmental

Project No: 70716124 AFT Annual Safety Imprvmt 2024

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
The driving and walking path to the steam turbine is dirt and gravel. The surface becomes muddy during rain and can be troublesome to drive and walk on. Access with fork trucks and moving/rigging heavy equipment across this area is difficult and can be a safety concern if the ground is uneven or wet. This project will pave this alleyway to provide a more efficient path with a firm surface and level base for manlift access. This ergonomic improvement will reduce worker fatigue when navigating through the mud and bumps and will create a better and safer work environment.

Project Need Justification
Currently during rain events, fork trucks can become stuck, 2-wheel carts cannot navigate, manlifts are difficult to level when working at heights, and heavy equipment tears up maintenance access areas. Paving the area will provide safe access to equipment and safe maintenance when working at heights.

Project Alternatives
The alternative is to do nothing and to continue to have muddy access to equipment during rain events, operate heavy equipment in uneven, rutted grounds, and assume the safety risk during operation. Paving the alleyway will provide a consistently safe, efficient, and firm surface for maintenance activities.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The primary benefit to the customer is the work environment is made safer for PNM's employees and equipment reliability is maintained, thus reducing the likelihood of work-related accidents at the Afton Plant site.

Primary Value Driver
Safety
When operating a manlift or other heavy lifting equipment, the requirement is to level the equipment prior to usage. Uneven surfaces are a risk liability, and this project will reduce that risk.

Reliability
This project ensures the continued reliable operation of Afton Station throughout the year.

System Performance

Security

Compliance

Environmental

Project No:

70716124 AFT Annual Safety Imprvmt 2024

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	37,567	-	37,400	-	-	-	-	-	74,967
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	1,634	-	1,627	-	-	-	-	-	3,261
928: AFUDC Debt	-	-	-	-	-	35	71	106	-	-	-	-	-	212
929: AFUDC Equity	-	-	-	-	-	61	122	184	-	-	-	-	-	367
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	(78,807)	-	-	-	-	-	(78,807)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	39,297	193	(39,490)	-	-	-	-	-	-

Project No: 70716223 Afton "H" ACC Fan Blade Repl 2023

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project will replace the complete set of blades on an Air-Cooled Condenser (ACC) fan. An ACC fan is a large axial flow fan, and the blades are the largest components of the fan. The blades are attached to a smaller, central hub driven by 200-horsepower motors. Several recent events have led to these blades fracturing and disengaging from the fan. Routine inspections have found cracks on these fans. This project will replace all blades, coupling flanges, clamping blocks and associated hardware on the ACC fan.

Project Need Justification
The project is needed to ensure the safe and reliable operation of the Afton Generation station. Due to the safety nature of the project, the upgraded "H" style of blades will be required. Inspection will continue, but the problematic blade failures will be improved and hopefully mitigated, with the upgrade.

Project Alternatives
The alternative of "Do Nothing" is not an option. PNM runs the risk of a potential life threatening safety event if the upgrade is not completed.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The primary benefit to the customer is that the work environment is made safer for PNM's employees, thus reducing the likelihood of work-related accidents.

Primary Value Driver Safety

Safety
This project reduces the risk of catastrophic failure of the ACC fan sets. A catastrophic failure could result in serious harm, if not a fatality, to individuals in the proximity of the ACC fans at the time of failure.

Reliability
This project reduces the risk of catastrophic failure of the ACC fan sets. Catastrophic failure could result in extensive down time which would negatively impact reliability and would be costly to make the repairs.

System Performance

Security

Compliance

Environmental

Project No: 70716321 AFT 21-03 Alarm System Upgrade

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 4/1/2021

Estimated Completion Date 12/31/2022

Description

This project involves the full replacement of the combustion turbine (CT) Carbon Dioxide (CO2) fire suppressant system. The proposed replacements will include the following work:
 - Site Wide Upgrade: Bulk of the necessary updates and replacement of obsolete equipment
 - Panel Upgrade: Replace the main control panel, which is outdated and not functioning well at this time. Also replace all 18 flame detectors
 - Life Safety Upgrade: Including parts, this upgrade is the personnel side of the upgrade. Time delays for evacuation, sirens and necessary updates to get the CO2 system up to date.

Project Need Justification

The Afton CTs have CO2 fire protection systems that report alarms to the control room. In recent months, the fire protection system has been throwing false codes and alarms. Inspections have determined that the faults are due to corrupt boards in the equipment and obsolete detectors. The alarm system just gradually quit communicating to the control room during operation. According to the OEM, the existing system is obsolete and is no longer supported/manufactured.

Project Alternatives

There are two options:
 Option 1: Replace the alarm system with one that is CO2 Fire Protection code compliant, provides available new part inventory with Plant personnel training, and includes authorized technicians available 24/7. The replacement ensures a reliable fire protection system that protects all required Steam turbine, Combustion turbine, Common Facilities and Electrical equipment.
 Option 2: Do not replace the alarm system. This is not a true option, as it fails to address the risk of a non communicating system that could fail to protect equipment during a catastrophic event at the Afton facility, endangering personnel, equipment, and ability to provide reliable energy to customers.

Project Estimate Approach

Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC, etc.) are estimated and added to the direct costs.

Customer Benefit

The PNM customers will benefit from this project through the ongoing safe, efficient, reliable, and cost effective operation of the plant.

Primary Value Driver Safety
 Safety Proper functioning alarm systems are required to protect personnel, property and equipment.

Reliability

System Performance

Security

Compliance

Environmental

Project No: 70716622 AFT Annual Safety Imprvmts 2022

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 8/23/2022

Estimated Completion Date 12/31/2022

Description

This project will construct a new platform which will allow access to the HP Valves attemperator instrumentation. Currently this instrumentation is inaccessible and requires scaffolding to reach the attemperator. In the past, contractors built scaffolding to access the attemperator and instrumentation, but it added cost and caused delay. This new platform will have 2 levels above the superheater section of the Heat Recovery Steam Generator (HRSG). The first level will be 7'x14' and the secondary level will be 4'x4'. This will support instrumentation repair/calibration as well as support safe access to the attemperator system.

This aligns with the Afton Safe Workplace Business Case by providing safe and ergonomic access to equipment to conduct necessary maintenance.

Project Need Justification

The project's primary objective is aligned with PNM's goal of proactively identifying and minimizing risk across operations. A secondary economic benefit will also be realized, as with the new platforms there will no longer be a need for additional labor and scaffolding for equipment access.

Project Alternatives

The alternative is a "do-nothing" approach and continuing to build scaffolding to access the instrumentation on an as-needed basis. This is a repetitive expense which still exposes scaffold builders to limited risk as they work outside of handrails and at elevation with tools and materials to erect scaffold. This project will eliminate these recurring costs and increase plant safety and ergonomics. A "do-nothing" approach will continue to expose Afton to additional costs and safety risks.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

The customer benefits from the reliability of the Afton Station and from PNM's commitment to operate the Afton Station equipment in a safe, reliable, and economic fashion.

Primary Value Driver Safety

Safety This project improves the safety conditions at Afton Generating Station

Reliability

System Performance

Security

Compliance

Environmental

Project No: 70716823 AFT Annual Safety Imprvmts 2023

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
One of the walking paths underneath the combustion turbine (CT) crosses by the carbon dioxide (CO2) tank, piping and supports that provide fire suppression for the CT. The routing of the CO2 piping and supports poses a safety concern and a risk to people hitting their shoulders and heads. This project would modify the pipe supports and relocate the piping to above head level. The valving, which is in Lock Out Tag Out (LOTO) during CT maintenance, will be relocated so that a ladder does not have to be utilized during LOTO installation and walkdowns.

Project Need Justification
The project's primary objective is aligned with PNM's goal of proactively identifying and minimizing risk across operations. Rerouting the CO2 piping will take away a safety risk and also allow for better access for maintenance and LOTO at the CT.

Project Alternatives
The do-nothing alternative of not rerouting the CO2 supply piping is not proactive in minimizing risk during maintenance and LOTO task activities. Implementing the piping reroute will eliminate, in most cases, the need for ladders and will streamline the task activities in the area around the CT.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The customer is benefited by PNM's commitment to operate the Afton facility in a safe, reliant, and most economic fashion.

Primary Value Driver Safety
Safety This project improves the safety of personnel, property and equipment and Afton Generating Station

Reliability

System Performance

Security

Compliance

Environmental

Project No: 70717022 Afton Rotor Replacement 2022

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 5/12/2022

Estimated Completion Date 9/1/2022

Description
During inspections during the Afton 2022 outage, the gas turbine rotor was found to be out of mechanical tolerance and could not be repaired. This project will remove the existing gas turbine rotor that was beyond repair and replace it with a new rotor.

Project Need Justification
During inspections during the Afton 2022 outage, the gas turbine rotor was found to be out of mechanical tolerance and could not be repaired. Running a gas turbine with major components out of specification, risks catastrophic failure and is a significant risk to personnel safety.

Project Alternatives
The risk to safety and reliability associated with a "do-nothing" option is not acceptable. There is no alternative.

Project Estimate Approach
The project was evaluated and engineered to effectively address an emergent need in a cost effective manner. A request for proposals (RFP) was sent out to Mechanical Dynamics & Analysis (MD&A), Power Systems Manufacturing (PSM), and General Electric (GE) for an exchange turbine rotor. The option to purchase the GE Compressor Rotor offered a brand new, fully enhanced compressor that would be married to the existing turbine rotor and shipped to Afton. Vendor quotes for the crane, scaffolding, electric, and QA/QC support were analyzed and awarded to complete the project.

Customer Benefit
Customer benefits are realized by safe, reliable, environmentally compliant and cost-effective management of the Afton Generating Station

Primary Value Driver Safety
Safety This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine.

Reliability

System Performance

Security

Compliance

Environmental

Project No: 70717923 Afton Bulk Low Pressure Hydrogen Storage Tank Project

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description Afton utilizes a hydrogen (H2) generator and 12-packs of hydrogen high pressure bottles to provide hydrogen to the gas turbine generator. When the H2 generator is unavailable, the 12-packs are utilized. Hydrogen 12-packs are becoming harder to get refilled in a timely manner and they provide a finite supply of hydrogen. Afton's continuous operation going forward will increase demand on the hydrogen supply. To ensure the availability of hydrogen and the reliability of the plant, this project will install a H2 storage tank.

Project Need Justification The project primary objective is aligned with PNM's goal of proactively identifying and minimizing risk across operations. This project will proactively limit reliability risks related to a lack of H2 availability and reduce the safety risks that come with handling explosive gas.

Project Alternatives The "do-nothing" alternative of utilizing the existing 12-pack system is undesirable from a safety perspective, as it involves the of handling explosive gas. It is also undesirable from an economic standpoint of expensive 12-pack rentals and availability risks. The chosen alternative is to install a hydrogen storage tank.

Project Estimate Approach Not required for projects with less than \$250,000 of expenditures.

Customer Benefit Customer is benefited through PNM's operation of the Afton Generating Station in a safe, reliant, and most economic fashion.

Primary Value Driver Safety

Safety This project will significantly reduce the frequency of handling explosive hydrogen gas cylinders.

Reliability This project will reduce Afton operational reliance on H2 gas cylinders, which are not always available.

System Performance

Security

Compliance

Environmental

Project No: 70730523 Afton Yard Lighting Project

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
The Afton Site has never had yard lighting installed. This has posed safety and security risks over the years, particularly in the early morning, late evening, and for nightshift workers accessing equipment. This project will procure and install the new generation of solar pole lighting across the site. This will allow for a fair amount of coverage without a significant amount of trenching or infrastructure installation.

Project Need Justification
New light poles are needed for the perimeter of the plant, particularly for early morning, late evening, and for nightshift workers accessing equipment. The lighting improvements were also recommended and endorsed by PNM's Safety Department to improve the safety for both drivers and pedestrians.

Project Alternatives
The only alternative to this project is to do nothing. This alternative was not pursued because poor lighting is a safety risk to employees that enter/ exit the facility during times of low light and personnel who work the nightshifts.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The primary benefit to the customer is that the work environment is made safer for PNM's employees, thus reducing the likelihood of work related accidents on the Afton Plant Site.

Primary Value Driver Safety
Safety Improved lighting leads to safer working conditions for personnel at Afton Generating Station

Reliability

System Performance

Security

Compliance

Environmental

Project No: 71316023 RGS U1&2 Cooling Tower Acid Tank

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
Sulfuric acid is required to maintain pH levels for the Reeves Unit 1&2 cooling towers. This acid is stored in a 4,500-gallon tank. The acid tank was installed when the unit was built in 1958 and needs to be replaced. A leak in this tank will cause an interruption in the cooling tower process necessary to keep the units online and will create a safety hazard. Engineering recommends that this tank be replaced. The scope of the project includes the purchase of a new tank, removal of the old tank, and installation of the new tank. In addition, new valves, gauges and piping will be installed, and the existing containment will be repaired and recoated. Engineering will develop the scope of work, purchase the new tank, manage construction, and track the project's costs and schedule.

Project Need Justification
The project is needed to ensure:
1) The continued safe operations at the plant; sulfuric acid is extremely caustic and an immediate safety concern.
2) The continued environmentally responsible operations of the plant; spilled sulfuric acid is a hazardous waste.
3) The continued reliable operation of Unit 1&2; sulfuric acid is required to maintain pH in the U1&2 cooling towers, and without control of pH, scale will build on equipment internals and begin to cause failures.

Project Alternatives
The alternative of "Do Nothing" is not an option. The project is required for continued safe operations.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The customer benefits when PNM operates its facilities safely and in an environmentally friendly fashion.

Primary Value Driver Safety

Safety The project is needed to ensure the continued safe operations at the plant; sulfuric acid is extremely caustic and an immediate safety concern.

Reliability The project is needed to ensure the continued reliable operation of Unit 1&2; sulfuric acid is required to maintain pH in the U1&2 cooling towers, and without control of pH, scale will build on equipment internals and begin to cause failures.

System Performance

Security

Compliance

Environmental The project is needed to ensure the continued environmentally responsible operations of the plant; spilled sulfuric acid is a hazardous waste.

Project No: 71316624 U3 Turbine and Generator Outage

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 6/30/2024

Description
This project will replace the major capital parts in the turbine generator during the 2024 Major outage. Steam erosion during operation wears on the stationary and rotating components over time, which requires replacement during major outages. Major capital replacements include but are not limited to: blade rings, bearings, nozzle blocks, and seals in the low-pressure and high-pressure sections of the turbine's rotor. The generator will require electrical testing to identify stator and rotor windings integrity. Engineering will coordinate the project's schedule, inspections, installation, and costs.

Project Need Justification
To prevent catastrophic turbine damage, turbine components must be renewed at timely intervals. Failure to replace these capital components will result in a turbine unfit for operation.

Project Alternatives
There are no alternatives for turbine outages. If the turbine is not overhauled, with eroded/worn components identified and replaced, it will not be fit to operate.

Project Estimate Approach
This project was estimated using PNM information on typical capital turbine replacements at the Reeves plant for U1 and U2 which are similar units with similar expected repairs in the recent past.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver
Safety
This project reduces the risk of catastrophic failure of steam turbine components. Catastrophic failure could result in serious harm to individuals in the proximity of the steam turbine.

Reliability
This project reduces the risk of catastrophic failure of steam turbine components. Catastrophic failure of turbine components cause significant down time.

System Performance

Security

Compliance

Environmental

Project No: 71316822 U3 Motor Control Ctrs, Strt, and Br

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 6/30/2024

Description

This project continues the Reeves Generating Station (GS) program to upgrade obsolete, unsafe and unreliable critical electrical equipment. The U3 motor control center breakers and starters provide the electrical energy for the plant's 480 auxiliary loads. These breakers and starters were installed back in 1959. Replacement parts are no longer available, and these breakers and starters are worn out to the level that they pose a safety and reliability risk. Engineering evaluated various options and recommends full replacement of 6 existing load center breakers with new breakers and rebuilding existing 32 starters with state-of-the art electrical components. To further improve safety against arc flashes, the new power breakers will be provided with provisions for remote racking and an arc flash maintenance switch. The starters will be solid-state tripping and metering devices. These new breakers and starters will offer greater safety precautions and maintain plant reliability. Engineering will develop required specifications, evaluate bids and track project schedule and costs.

Project Need Justification

Existing equipment is obsolete and unreliable, and the parts to rebuild the breakers are not available. These breakers are operated continuously, have worn out over time, and now pose a safety and reliability risk.

Project Alternatives

There are no alternatives. Replacement parts are no longer available, and these breakers and starters are worn out to the level that they pose a safety and reliability risk, so "do nothing" is not an option.

Project Estimate Approach

Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit

Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver

Safety

Safety

This project will reduce the risk of an arc flash.

Reliability

Obsolete parts will be replaced with new, more reliable equipment.

System Performance

Security

Compliance

Environmental

Project No: 74416222 Luna Hot Gas Path 2022

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Luna 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description

General Electric (GE) recommendations are to perform a Hot Gas Path Inspection (HGPI) every 24,000 hours of operation. Currently, there are 18147.3 hours on Gas Turbine 1 (GT1) since the last HGPI in March 2019. By the end of February 2022, it is estimated that GT1 will have 24,000 hours of operation. The HGPI needs to be performed for the safe and reliable operation of GT1. The number of operating hours is defined by GE and is required for continued operation.

Project Need Justification

Routine inspections of the combustion turbine and systems are needed to ensure these systems operate as designed by GE. These inspections help identify potential issues that, if left unresolved, may result in failures that could impact safety, reduce reliability, and/or potentially result in the need to perform more costly repairs in the future.

Project Alternatives

The only other option would be to do nothing. This is not a feasible option as these inspections are needed to ensure the safe and reliable operation of this plant.

Project Estimate Approach

Direct project direct costs are estimates provided by the vendor based on actual costs to perform similar work in the past. PNM's indirect costs (e.g., project controls, contingency, AFUDC, etc.) are estimated based on similar projects performed in the past.

Customer Benefit

By performing this inspection, PNM ensures the combustion turbine and systems are working properly and are able to generate electricity in a safe and reliable manner. Furthermore, these inspections can identify other issues that if repaired reduce the risk (and associated costs) of future failures.

Primary Value Driver

Safety

Safety

This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine at the time of failure.

Reliability

This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure would result in extensive down time which would negatively impact reliability and would be costly to make the repairs necessary to bring the plant back into service.

System Performance

Security

Compliance

Environmental

Project No: 74417024 Luna Capital Planned Outage 2024

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Luna 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This project is for the capital replacements made during the planned outages at Luna Energy Facility (EF) in 2024. This is for the periodic gas turbine major maintenance which includes Hot Gas Path Inspections, Major Inspections, major Valve Replacements, and other major Capital expenditures. These inspections are done on a prescribed schedule based on gas turbine operating hours and fired starts.

Project Need Justification
In order to ensure reliable and efficient operation for years to come, periodic gas turbine major maintenance, which includes Hot Gas Path Inspections and Major Inspections, must be performed on a prescribed schedule based on gas turbine operating hours and fired starts. If this maintenance is not completed, the turbines are not fit for operation.

Project Alternatives
The only other option would be to do nothing. This is not a feasible option as these inspections are needed to ensure the safe and reliable operation of this plant.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funding used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver
Safety
This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine.

Reliability
This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure would result in extensive down time and cost.

System Performance

Security

Compliance

Environmental

Project No:

74417024 Luna Capital Planned Outage 2024

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	2,953,749	-	-	-	-	-	-	3,120,500	-	6,074,249
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	(1,968,969)	-	-	-	-	-	-	(2,080,125)	-	(4,049,094)
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	920	-	-	-	-	-	-	972	1,948	3,840
929: AFUDC Equity	-	-	-	-	1,595	-	-	-	-	-	-	1,685	3,377	6,656
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	38,989	-	-	-	-	-	-	41,191	-	80,180
825: Closing Addition	-	-	-	-	(1,026,284)	-	-	-	-	-	-	-	(1,089,547)	(2,115,831)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	(0)	-	-	-	-	-	-	1,084,222	(1,084,222)	-

Environmental Enhancement Capital Projects

PNM Exhibit RBH-3

Is contained in the following 8 pages.

Project No: 04616024 RB CEM O2 and NOX Analyzers

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
The current nitrogen oxide (NOx) and oxygen (O2) analyzers are at the end of their lifecycles and need to be replaced. The NOx analyzers measure oxides of nitrogen derived from the gas fuel being burned by the turbine system. Combustion at high temperatures allows the reaction of nitrogen and oxygen atoms to combine to create nitric oxide (NO) and nitrogen dioxide (NO2). The O2 analyzer measures oxygen in the fuel being burned. The upgrade will ensure the continued accurate NOx and O2 gas monitoring to meet federal and state emissions regulations.

Project Need Justification
Renewal of the NOx and O2 analyzers ensure our plants continue to operate based on correct information, at rated efficiencies, and in an environmentally friendly and compliant fashion.

Project Alternatives
The alternative of "Do Nothing" is not an option. PNM runs the risk of not meeting federal and state emissions if NOx and O2 analyzers are not replaced.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Environmental

Safety

Reliability

System Performance

Security

Compliance PNM is required to maintain functional NOx and O2 equipment for environmental compliance.

Environmental PNM is required to maintain functional NOx and O2 equipment for environmental compliance.

Project No: 70717123 AFT Ammonia and NOx Analyzer

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project will install ammonia and nitrogen oxide (NOx) analyzers to improve ammonia injection. The Self Catalytic Reduction (SCR) ammonia injection is currently dosed by historical amounts, which can lead to over-injection. This ammonia and NOx analyzer would provide a feedback loop to enable injecting the correct amount of ammonia. This will lead to longer catalyst life, minimize Heat Recovery Steam Generator (HRSG) cleaning from ammonia crystallization, save cost, and reduce ammonia usage. The project will include an upstream NOx analyzer and downstream ammonia analyzer. This system does not currently exist, and the project will include the necessary engineering, procurement and installation of these analyzers.

Project Need Justification
Installation of the ammonia and NOx analyzers will ensure the plants operate based on correct information, at rated efficiencies, and in an environmentally friendly and compliant fashion.

Project Alternatives
The alternative of "do-nothing" is not an option. PNM runs the risk of not meeting federal and state emissions standards if ammonia and NOx analyzers are not replaced.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant, and cost effective management of PNM's power generation assets.

Primary Value Driver Environmental

Safety

Reliability

System Performance

Security

Compliance

Environmental PNM is required to maintain functional ammonia and NOx equipment in order to meet federal and state emissions standards.

Project No: 70717125 AFT Reline NE Pond

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This project will replace the liner in the North East (NE) evaporation pond at Afton Generating Station. The current NE evaporation pond has been accumulating wastewater blowdown solids from the beginning of combined cycle operations. The pond has the original liner and has never been relined or cleaned. The sludge build-up is approaching the permitted free-board upper limit. The sludge currently contained inside the NE pond needs to be removed, and the evaporation pond needs to be relined. There are four evaporation ponds total, and PNM can utilize the North West (NW) evaporation pond during the relining project to limit the impact on plant operations.

Project Need Justification
This project is needed to ensure the continued environmentally responsible and compliant operations of the Afton Generation Station. Without sufficient free-board to accept blowdown water in the evaporation ponds, Afton will not be able to operate.

Project Alternatives
Liner replacement in the existing NE pond is more cost effective than a new pond installation. The alternative of "do nothing" is not a viable option for keeping Afton operating in a compliant and environmentally responsible way.

Project Estimate Approach
Direct project costs are estimates provided by the vendor based on the actual costs to perform similar work in the past. PNM's indirect costs (e.g., project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated based on similar projects performed in the past.

Customer Benefit
The customer benefits through PNM's environmentally responsible and compliant operations.

Primary Value Driver Environmental

Safety

Reliability

System Performance

Security

Compliance

Environmental This project replaces the liner in the NE evaporation pond prior to deterioration to the point of failure, preventing the release of hazardous waste at the Afton site.

Project No:	70717125 AFT Reline NE Pond							
	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	47,747	-	-	-	-	47,747	95,257	190,278	284,827	92,420	-	758,278
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	2,077	-	-	-	-	2,077	4,144	8,277	12,390	4,020	-	32,985
928: AFUDC Debt	-	-	45	-	-	-	-	45	179	448	895	1,253	-	2,865
929: AFUDC Equity	-	-	78	-	-	-	-	78	310	776	1,552	2,173	-	4,966
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	(49,946)	-	-	-	-	-	-	-	-	(749,148)	-	(799,094)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	(0)	-	-	-	-	49,946	99,891	199,779	299,665	(649,281)	-	-

Project No: 71316614 Reeves Common Evap Pond Reline

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2021

Estimated Completion Date 10/30/2025

Description
Reeves Generating Station uses two evaporation ponds, (North Pond and South Pond) to collect plant water discharge from boiler blowdown and demineralizer wastewaters. The ponds were installed 40+ years ago. Recent liner tests indicate seam degradation is occurring and recommendations for capping the existing seams or replacing the liner have been made. This project will either re-cap the existing seams or re-line the ponds (one at a time) with a new liner system ensuring the continued reliability of the ponds.

Project Need Justification
Recent tests completed by Southwest Liner Systems indicate separation at the seams. The project is necessary to ensure hazardous waste does not leak from the ponds.

Project Alternatives
Option 1: Do Nothing: Due to the risk of Hazardous Wastes leakage, this option is not available.
Option 2: Repair liner (Cap Seams): This option is preferred as long as the existing liner is in good condition and passes inspection upon removal of all debris.
Option 3: Replace liner: This option may become necessary if the existing liner is found to have damage after debris removal.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Environmental

Safety

Reliability

System Performance

Security

Compliance This project maintains the liner integrity of the evaporation pond. This is required to maintain compliance with environmental regulations.

Environmental This project maintains the liner integrity of the evaporation pond. This is required to maintain compliance with environmental regulations.

Reliability Enhancement Capital Projects

PNM Exhibit RBH-4

Is contained in the following 86 pages.

Project No: 04616122 RB Admin UPS Replacement

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description

This project will provide an uninterruptible power supply (UPS) for the administrative building. Additional computer and critical electrical loads have been added to the building, and the existing circuits are now approaching full loading conditions. Since many of the new loads are computer loads and network switches, it is imperative that a UPS be added to minimize the loss of computer data during loss of power events, which can occur at any time. Some of the critical loads include the plant industrial control computer and Inter-Control Center Communications Protocol (ICCP) interface to the dispatch center. Engineering will coordinate all electrical design, purchase equipment and track the projects' costs and schedule.

Project Need Justification

This project provides backup power for critical loads during power interruptions. Loss of these critical loads could cause a unit trip or loss of communication to the dispatch center.

Project Alternatives

The alternative is "Do Nothing" which is not the preferred alternative due to possible impacts during a power outage.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

The customer benefits with reliable power that is not interrupted by minor grid disturbances in the localized area of Rio Bravo.

Primary Value Driver

Reliability

Safety

Reliability

This project ensures the continued reliable operation of Rio Bravo during local power outages.

System Performance

Security

Compliance

Environmental

Project No: 04616124 RB Compressor Bleed Valves

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
The 7FA gas turbine uses compressor bleed valves to protect the compressor against stalling and surging conditions during start-up and shutdown. These valves have been shown to have limited operating lives and require replacement to insure reliable operation. It's recommended that the compressor bleed valves be replaced. This project will procure and install these components.

Project Need Justification
The bleed valves function to preheat the combustion turbines' inlet temperature during startup and cold weather conditions. If the compressor bleed valves fail, the unit cannot run and it would take at least one week to procure and install a new valve on an emergency basis. The manufacturer recommends replacing these components every five (5) years. Engineering provides the scope of work to purchase and install the bleed valves. Engineering will track project costs and schedule

Project Alternatives
There are two other alternatives to replacing the valves:
Option 1: Replace the valves as recommended by the manufacturer in order to ensure reliable valve usage throughout a 4-year run.
Option 2: Do not replace the valves. This is not a true option as it fails to address the risk of not being able to start-up the combustion turbine (CT) or the risk of CT shutdown due to stalling or surging.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability Replacement of these components are required to maintain the unit's availability for dispatch.

System Performance

Security

Compliance

Environmental

Project No:

04616124 RB Compressor Bleed Valves

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	2,077	-	2,077
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	45	-	45
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	78	-	78
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	(49,946)	-	(49,946)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	(0)	-	(0)

Project No: 35730521 21-01 Aztec Building A Boiler Repla

Company: 003 Bulk Power
Location: 357 Bulk Power Building Allocation

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2021

Estimated Completion Date 6/30/2023

Description
General Services is recommending the replacement of the current boiler plant system at the Aztec A building, which serves approximately 55,000 sqft on a single primary loop. This project will replace the boiler, pump, and associated heating components, and it includes all required electrical and plumbing work. The initial phase of this project will involve mechanical, engineering and plumbing (MEP) engineering design which will produce the appropriate construction drawings (CDs) for contractor request for proposals (RFPs). The CDs will provide all specifications and drawings for permitting and plan review.

Project Need Justification
Boiler equipment has a finite lifespan, and as aging equipment becomes suspect, it is imperative to refurbish or replace the equipment before failures force the closure of the building and affect operations.

Project Alternatives
The alternative of "do-nothing" is not preferred due to the possible impact on operations (for example, personnel needing to be sent home due to heating failures), and the continued cost and expense of ongoing repairs and maintenance. The alternative of refurbishment was looked into; however, full replacement with new equipment will increase system efficiency, allow for better control, and minimize routine maintenance. The most cost-effective solution is full replacement, which will ensure a comfortable work environment for the building occupants.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The customer benefits when PNM operates its facilities smoothly and efficiently. To that end, it is a necessity that PNM does not allow preventable failures to impact daily operations.

Primary Value Driver Reliability

Safety

Reliability Maintaining heating systems in buildings ensures the continued reliable operation of PNM's facilities.

System Performance

Security

Compliance

Environmental

Project No: 35730522 Aztec HVAC Chiller Replacement

Company: 003 Bulk Power
Location: 357 Bulk Power Building Allocation

Project Information

County % Bernalillo 100%

Estimated Start Date 8/1/2022

Estimated Completion Date 3/30/2023

Description
The Aztec chiller system is in immediate need of replacement. PNM has been working with the mechanical contractor for three months to evaluate the mechanical problems that continue to shut the system down and was recently told that a new system should be ordered as soon as possible. Without this unit, the building heats up to well over 80 degrees in the summer, forcing supervisors and managers to send their employees home to work or find alternate work locations, which is very disruptive to all of the operations in the building.

Project Need Justification
Heating, ventilation and air conditioning (HVAC) equipment has a limited lifespan, and as aging equipment becomes suspect, it is imperative to refurbish or replace equipment before failures force the closure of a building and affect operations.

Project Alternatives
A "do-nothing" scenario is not an option. The chiller system definitely needs to be replaced with an updated, more reliable system. Various makes and models of equipment have been researched, including Daikin, Carrier, Trane and York brands. Given the contractors' knowledge of the various manufacturers' products, as well as considering price and lead times, PNM selected a comparable York brand system.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The customer benefits when PNM operates its facilities smoothly and efficiently. To that end, it is a necessity that PNM does not allow preventable failures of HVAC equipment to impact daily operations.

Primary Value Driver Reliability

Safety

Reliability
When the Aztec HVAC fails, the entire Environmental, Engineering and Land Services staff is sent home or required to work elsewhere. This interruption has a negative effect on operational efficiency and impacts the reliable operation of PNM's facilities in various indirect ways.

System Performance

Security

Compliance

Environmental

Project No: 70016023 Solar / BESS Eng Ctrl Comm and Station - Aztec

Company: 003 Bulk Power
Location: 700 Production Division

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2024

Description
This project will create an engineering control station at PNM's Aztec building, which will allow PNM Generation Engineers to remotely manage solar and battery energy storage system (BESS) assets. This project includes the procurement and setup of an Engineering Workstation computer, Operational Technology (OT) Network connection, and a Physical Security Perimeter with badged doors.

Project Need Justification
Most PNM-owned and power purchase agreement (PPA)/energy service agreement (ESA) solar and BESS facilities have no personnel on-site, so timely management of the site requires remote access capabilities. This management includes site troubleshooting and changing manual setpoints, such as changing reactive power settings on inverter-based resources at the request of Power Operations.

Project Alternatives
The alternative to this project is to require engineers to use a Jump Server to access the OT Network from the computer in their cubicle and then remote-in to the applicable site. However, this introduces a security risk as engineers will access control networks outside of a physically-secured perimeter.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability This project will allow for a fast and efficient way of adjusting inverter-based resource settings when requested by Power Operations, and allow for troubleshooting by Generation Engineering.

System Performance

Security Providing an engineering workstation with an OT network connection inside of a physically-secured perimeter eliminates the need to access the network through a jump server in an unsecured office environment.

Compliance

Environmental

Project No: 70028021 Energy Storage and Scheduling Optimization System(Battery Integration)

Company: 003 Bulk Power
Location: 700 Production Division

Project Information

County % Bernalillo 100%

Estimated Start Date 10/8/2021

Estimated Completion Date 12/31/2023

Description

This project will implement a centralized control system that manages the numerous battery energy storage systems (BESS) currently being constructed on PNM's grid. The project will meet the following objectives via software and related implementation and integration services:

- Respect necessary constraints, such as those described in request for proposals (RFPs): point of interconnection (POI) limits, operating reserve limits, state of charge (SOC) limits, average daily cycling limits, etc.
- Lower costs by reducing curtailments on renewable resources
- Reduce peak load by discharging batteries
- Maximize revenue via energy imbalance market (EIM) participation

The following will take place during the development stage:

- Obtain software licenses, including licenses related to community choice aggregators (CCAs)
- Procure materials and services, including from third parties, to develop or obtain internal-use software
- Coding and testing
- ~~Develop or obtain software that allows for access or conversion of old data by new systems.~~

Project Need Justification

To ensure battery reliability and longevity, a centralized control system is necessary to monitor and manage the charge/discharge of all battery assets relative to the need and availability of power. This management system will maximize the long-term value of PNM's battery assets, assist in PNM's goal of zero-carbon, meet local grid requirements, and minimize manual intervention by dispatchers.

Project Alternatives

This project is required as part of connecting battery storage to the PNM grid. The "do nothing alternative" continues to use the current system, which lacks the features and functionality to manage a battery storage system.

Project Estimate Approach

Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit

Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver

Reliability

Safety

Reliability

This project will improve reliability and longevity of battery energy storage systems (BESS) on PNM's grid.

System Performance

This project will allow for the centralized control of the charge/discharge of all BESS assets across the fleet, which greatly improves system performance by allowing them to compensate for changes in uncontrollable generation output at a different physical location in the system.

Security

Compliance

Environmental

Project No: 70028022 OSI Soft Enterprise Software/Licens

Company: 003 Bulk Power
Location: 700 Production Division

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2027

Description OSIssoft's data historian houses PNM's real-time industrial data. This project expands real-time data collection on generation assets, including software and system upgrades, additional plant information (PI) servers, additional PI server components (e.g., tags), additional PI interfaces and connectors, and additional client applications.

Project Need Justification Effective reliability asset management and compliance programs include equipment monitoring and diagnostic capabilities. Locations of generation assets are not currently monitored in real-time, making monitoring of those assets less effective.

Project Alternatives The only alternative is to do nothing, which limits the effectiveness of the equipment monitoring and diagnostic programs.

Project Estimate Approach Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

Reliability This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

System Performance This project improves optimizes equipment performance by allowing early identification of anomalies which reduces reactive work.

Security

Compliance This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

Environmental This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

Project No: 70028022 OSI Soft Enterprise Software/Licens

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	237,500	-	-	-	-	-	-	-	237,500
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	353	721	-	-	-	-	-	-	1,074
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	8,526	-	-	-	-	-	-	-	8,526
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	(247,100)	-	-	-	-	-	-	(247,100)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	246,379	(246,379)	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	237,500	-	-	-	-	237,500	-	-	-	-	-	-	-	475,000
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	1,074	-	-	-	-	427	860	-	-	-	-	-	-	2,361
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	8,526	-	-	-	-	10,331	-	-	-	-	-	-	-	18,858
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(247,100)	-	-	-	-	-	(249,118)	-	-	-	-	-	-	(496,218)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	248,259	(248,259)	-	-	-	-	-	-	0

Project No: 70028122 Battery Integration/Renewable forecasting upgrades

Company: 003 Bulk Power
Location: 700 Production Division

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2027

Description
This project will apply Machine Learning and Artificial Intelligence (AI) to battery energy storage system (BESS) scheduling optimization, renewable generation forecasting, and system load forecasting. The project includes the implementation of the hardware, deployment and development of the Machine Learning and AI, and licensing of the product starting in 2023.

Project Need Justification
PNM is expected to have a significant amount of BESS on the system in the near future, and will be depending upon the BESS assets to provide grid services as PNM transitions to a 100% carbon-free future. In order to ensure that adequate charge is available to provide these grid services, most of the scheduling and optimization will need to be performed by a system that is capable of analyzing all of the variables. This optimization will also improve system performance and ensure that the BESS assets are being used in the most valuable way. In order to optimize the charge and discharge of the BESS assets, the system must also accurately forecast both generation and demand.

Project Alternatives
The project alternative is to do nothing; however, this introduces additional risks. Manually scheduling BESS assets is more likely to lead to scenarios in which no charge is available when needed for ancillary services, negatively affecting system reliability. Manually scheduling BESS assets is also less likely to operate the assets in the most valuable manner, negatively affecting system performance. Manually scheduling BESS assets may also shorten the life of the assets, introducing a direct cost of replacement.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability
This project will implement Machine Learning and AI to optimize BESS scheduling, which will be done in a way to ensure that charge is available when needed for system reliability functions. The project is also likely to improve the longevity of the BESS assets on PNM's system.

System Performance
This project will implement Machine Learning and AI to optimize BESS scheduling, which results the BESS assets being used in the most valuable manner.

Security

Compliance

Environmental

Project No: 70028122 Battery Integration/Renewable forecasting upgrades

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	95,000	95,000	47,500	237,500
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	152	463	707	1,323
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	3,411	3,411	1,705	8,526
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	(247,349)	(247,349)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	98,563	98,874	(197,437)	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	237,500	-	-	-	-	-	-	-	-	-	96,000	95,000	47,600	476,100
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	1,323	-	-	-	-	-	-	-	-	-	173	520	785	2,801
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	8,526	-	-	-	-	-	-	-	-	-	4,176	4,133	2,071	18,905
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(247,349)	-	-	-	-	-	-	-	-	-	-	-	(250,457)	(497,807)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	100,349	99,652	(200,001)	(0)

Project No: 70316023 Standardize Control Systems to Ovat

Company: 003 Bulk Power
Location: 703 Lordsburg

Project Information

County % Hidalgo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2024

Description
The current supervisory control and data acquisition (SCADA) system installed at Lordsburg is at end of its life. This project will replace the current control system to current standards and specifications, increasing operability and security.

Project Need Justification
The current control system is at the end of its life, out of support by the original equipment manufacturer (OEM), and requires replacement to stay reliable. The system requires updating to ensure operability and security requirements continue to be met.

Project Alternatives
The only alternative is to do nothing. Doing nothing increases the risk to operation and security.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety

Reliability This project contains multiple items that affect various components that could impact cyber security compliance and reliability.

System Performance

Security This project contains multiple items that affect various components that could impact cyber security and reliability.

Compliance

Environmental

Project No: 70316119 Lordsburg Outage Project

Company: 003 Bulk Power
Location: 703 Lordsburg

Project Information

County % Hidalgo 100%

Estimated Start Date 1/1/2019

Estimated Completion Date 12/31/2023

Description
This project covers the replacement of capital assets at Lordsburg that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant in 2023. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant. This project includes required control system upgrades to the GE gas turbines to maintain support and operability

Project Need Justification
This project covers the replacement of capital assets at Lordsburg that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant in 2023. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance, of the plant. An alternative to replacing the failed or faulty asset would mean doing nothing which would jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety This project covers the replacement of essential capital assets (like platforms and scaffolds) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance This project covers the replacement of essential capital assets (like control systems) that help to optimize efficient operation of the plant.

Security

Compliance

Environmental

Project No: 70316524 Lordsburg Cap Planned Outage 2024

Company: 003 Bulk Power
Location: 703 Lordsburg

Project Information

County % Hidalgo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This project covers the replacement of capital assets at Lordsburg that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant for the budget year 2024. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Need Justification
This project covers replacement of capital assets at Lordsburg that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant in 2024. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance, of the plant. An alternative to replacing the failed or faulty asset would mean doing nothing which would jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety This project covers the replacement of essential capital assets (like platforms and scaffolds) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance This project covers the replacement of essential capital assets (like control systems) that help to optimize efficient operation of the plant.

Security

Compliance

Environmental

Project No: 70317923 Lordsburg Capital Improvements 2023

Company: 003 Bulk Power
Location: 703 Lordsburg

Project Information

County % Hidalgo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This is an annual project to cover the emergent replacement of smaller capital assets at Lordsburg Generating Station in 2023. Covered work orders within this project are typically to replace assets essential to maintain and the ensure ongoing safe, compliant, efficient and reliable operation of the plant.

Project Need Justification
This project covers the replacement of capital assets at Lordsburg that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance of the plant. The alternative to replacing the failed or faulty asset would mean doing nothing which could jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety This project covers the replacement of essential capital assets (like platforms and scaffolding) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance This project covers the replacement of essential capital assets (like control systems) that help to optimize efficient operation of the plant.

Security

Compliance

Environmental This project covers the replacement of essential capital assets (like spill containment systems) that ensure environmentally compliant operation of the plant.

Project No: 70317924 Lordsburg Capital Improvements 2024

Company: 003 Bulk Power
Location: 703 Lordsburg

Project Information

County % Hidalgo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This is an annual project to cover the emergent replacement of smaller capital assets at Lordsburg Generating Station in 2024. Covered work orders within this project are typically to replace assets essential to maintain and the ensure ongoing safe, compliant, efficient and reliable operation of the plant.

Project Need Justification
This project covers the replacement of capital assets at Lordsburg that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance of the plant. The alternative to replacing the failed or faulty asset would mean doing nothing which could jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety This project covers the replacement of essential capital assets (like platforms and scaffolding) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance This project covers the replacement of essential capital assets (like control systems) that help to optimize efficient operation of the plant.

Security

Compliance

Environmental This project covers the replacement of essential capital assets (like spill containment systems) that ensure environmentally compliant operation of the plant.

Project No: 70518222 Distribution Battery Expansion Project

Company: 003 Bulk Power
Location: 705 Bulk Power Projects

Project Information

Estimated Start Date 1/1/2022
Estimated Completion Date 6/30/2025

County %	Bernalillo	43%
	Valencia	29%
	Sandoval	14%
	Santa Fe	14%

Description
PNM will purchase, own, and install 42 MW of battery energy storage systems (BESS) that will be spread across existing PNM solar facility sites located on PNM distribution feeders. The BESS will be installed on the PNM distribution feeders with the highest constraints in an effort to alleviate constraints on these feeders. This project has many purposes, including addressing resource adequacy issues, providing distribution support on certain constrained feeders, addressing feeder limitations, improving voltage control on feeders, and increasing solar hosting capacity.

PNM will own and operate the sites. A request for proposal (RFP) has been issued for development support.

Project Need Justification
PNM's 2020 Integrated Resource Plan (IRP) identified the need for significant investments in energy storage to meet balancing needs and ensure resource adequacy. The installation of these batteries will improve system reliability by reducing solar energy-induced high voltages on distribution feeders that are already at capacity. Batteries located on PNM solar sites will also allow additional customer solar interconnections on affected feeders without other significant system upgrades.

Furthermore, scheduling delays from third-party-developed solar/BESS projects have increased the risk of inadequate reserve capacity during the summer months in the next few years. Installing BESSs on existing infrastructure and interconnections at PNM-owned solar facilities reduces the inherent risk to schedule delays of using a third-party.

Project Alternatives
An alternative to the issue of constrained feeders would be making upgrades to the distribution system. This option was not selected due to significant cost and extended lead times. This option also does not provide the additional benefits to the overall grid, such as energy arbitrage and renewable smoothing.

Project Estimate Approach
Project direct costs were derived from a bid process for procurement of the BESS system. Engineering consultant estimates are based upon historical actuals from similar projects for the installation of the BESS system. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized with continued reliable power delivery, and relief from distribution constraints hindering additional customer solar interconnections on affected feeders.

Primary Value Driver Reliability
Safety

Reliability This project will improve system reliability by reducing solar energy-induced high voltages on distribution feeders that are at capacity.

System Performance Batteries located on PNM solar sites will allow additional customer solar interconnections on affected feeders without other significant system upgrades.

Security

Compliance

Environmental

Project No: 70518222 Distribution Battery Expansion Project

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	4,985,000	-	-	-	-	-	-	14,124,000	-	3,323,000	-	-	22,432,000
370: Outside Services	-	-	-	-	-	-	-	-	-	-	2,455,000	-	-	2,455,000
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	14,756	-	-	-	-	-	-	41,807	-	9,836	-	-	66,399
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	49,850	-	-	-	-	-	-	141,240	-	57,780	-	-	248,870
928: AFUDC Debt	-	5,368	10,761	10,813	10,866	10,918	10,971	11,024	26,286	41,622	48,037	54,483	54,747	295,897
929: AFUDC Equity	-	6,847	13,728	13,794	13,861	13,928	13,995	14,063	33,531	53,094	61,277	69,501	69,837	377,456
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	5,061,821	24,489	24,608	24,727	24,846	24,966	25,087	14,366,864	94,716	5,954,930	123,984	124,584	25,875,621

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	22,432,000	-	4,154,000	-	10,800,500	831,000	-	2,492,500	831,000	-	-	-	12,462,000	54,003,000
370: Outside Services	2,455,000	-	-	-	5,138,000	-	-	2,455,000	-	-	-	-	-	10,048,000
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	66,399	-	12,296	-	31,969	2,460	-	7,378	2,460	-	-	-	36,888	159,849
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	248,870	-	41,540	-	159,385	8,310	-	49,475	8,310	-	-	-	124,620	640,510
928: AFUDC Debt	295,897	46,498	50,508	54,536	69,297	84,886	66,266	71,088	76,690	57,589	57,872	58,156	69,784	1,059,067
929: AFUDC Equity	377,456	80,603	87,552	94,536	120,123	147,146	114,868	123,227	132,938	99,827	100,318	100,810	120,967	1,700,370
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	#####	-	-	#####	-	-	-	-	(22,274,720)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	25,875,621	127,101	4,345,896	149,072	16,319,274	(9,941,074)	181,134	5,198,668	#####	157,416	158,189	158,966	12,814,258	45,336,076

Project No: 70534023 PNM Renewable Sites Capital Repl 20

Company: 003 Bulk Power
Location: 705 Bulk Power Projects

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This is an annual project to cover the emergent replacement of smaller capital assets at solar facilities. Covered projects typically replace assets essential to maintain and ensure ongoing safe, compliant, efficient and reliable operation. This project is for the 2023 budget year.

Project Need Justification
This project covers replacement of capital assets at solar sites that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Common types of capital improvements covered by this project include various smaller capital assets like inverters, control system components, and electrical components necessary to operate these sites.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance, of the plant. An alternative to replacing the failed or faulty asset would mean doing nothing which would jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the sites.

Primary Value Driver Reliability

Safety

Reliability This project covers the replacement of essential capital assets (like failed inverters) that ensure the reliable operation of the plant.

System Performance

Security

Compliance

Environmental

Project No: 70534024 PNM Renewable Sites Capital Repl 20

Company: 003 Bulk Power
Location: 705 Bulk Power Projects

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This is an annual project to cover the emergent replacement of smaller capital assets at solar facilities. Covered projects typically replace assets essential to maintain and ensure ongoing safe, compliant, efficient and reliable operation. This project is for the 2024 budget year.

Project Need Justification
This project covers replacement of capital assets at solar sites that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Common types of capital improvements covered by this project include various smaller capital assets like inverters, control system components, and electrical components necessary to operate these sites.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance, of the plant. An alternative to replacing the failed or faulty asset would mean doing nothing which would jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the sites.

Primary Value Driver Reliability

Safety

Reliability This project covers the replacement of essential capital assets (like failed inverters) that ensure the reliable operation of the plant.

System Performance

Security

Compliance

Environmental

Project No:

70534024 PNM Renewable Sites Capital Repl 20

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	47,500	-	-	47,500	-	-	-	-	47,500	-	142,500
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	2,066	-	-	2,066	-	-	-	-	2,066	-	6,199
928: AFUDC Debt	-	-	-	45	-	-	45	89	90	90	91	45	89	583
929: AFUDC Equity	-	-	-	77	-	-	77	155	156	156	157	77	155	1,010
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	(49,688)	-	-	-	-	-	-	(50,671)	-	(49,932)	(150,292)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	49,688	244	245	246	(50,424)	49,688	(49,688)	-

Project No: 70716222 Afton Cooling Tower #1 Fan Motor Replacement

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 6/8/2022

Estimated Completion Date 12/31/2022

Description Afton Generating Station has a two-cell conventional cooling tower with two fans driven by large electric motors. Motor #1 has failed and requires replacement. This project replaces the entire failed motor including the necessary crane and associated labor.

Project Need Justification The Afton cooling tower is only a two-cell unit, and both fans are required to keep load in the summer. Motor failure causes a 25% derate on the units over a possible 5-day procurement/installation period. Replacement of the failed motor is necessary.

Project Alternatives The alternative, based on a "do-nothing" scenario where motor failure causes a 25% derate over a possible 5-day period, results in a ~\$340K cost to generation. The chosen alternative is to install the replacement motor to ensure the least amount of megawatt loss,

Project Estimate Approach Not required for projects with less than \$250,000 of expenditures.

Customer Benefit The project will benefit customers in all of the PNM territories by providing the least amount of downtime with reliable energy at the maximum capacity of the Afton Station.

Primary Value Driver Reliability

Safety

Reliability This project reduces the extensive down time and cost on the cooling tower from a failed motor, improving reliability.

System Performance

Security

Compliance

Environmental

Project No: 70716224 AFT Plant HVAC Upgrades 2024

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description

This project is one of multiple capital projects to replace all (HVAC) Heating Ventilation Air Conditioning in various Afton Plant buildings and enclosures over a period of 3-4 years. The intent in 2024 is to replace HVAC in the Admin building. Admin HVAC is needed to cool control room and IT systems, which are temperature sensitive. The existing HVAC was replaced in 2002 and is at the end of its life. The current HVAC system is requiring more and more maintenance in recent years, and replacement is recommended. Loss of these units during a hot summer day could cause an equipment failure or software trip.

Project Need Justification

HVAC equipment has limited lifespans, and as aging equipment becomes suspect, it is imperative to refurbish or replace before failures force the closure of the building and affect operations.

Project Alternatives

The alternatives are to continue to utilize the aging equipment to failure and assume the risk to operation. Management has determined the best investment is to replace the HVAC units and ensure the reliability of the units.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

The HVAC improvements will benefit customers in all of the PNM territories by ensuring reliable operations and energy during the hot summer months.

Primary Value Driver

Reliability

Safety

Reliability

Replacing this aging equipment maintains equipment in the proper environment, preventing premature failure.

System Performance

Security

Compliance

Environmental

Project No: 70716323 AFT (GT) Gas Turbine Thermocouples/Thermowells

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project will upgrade the Afton Gas Turbine's Thermowell/Thermocouple to a new design that will eliminate sticking and head breakage, increasing reliability. Life expectancy of the new style is expected to be 150,000 hours, which is approximately the life of the plant.

Project Need Justification
Thermocouples are required for unit operation. This project ensures the Thermowell/Thermocouple is reliable, therefore lowering the risk of an outage to the generating unit. Loss of Thermocouples can (and recently has) take the unit off-line.

Project Alternatives
The do nothing alternative risks the reliability of the unit as loss of Thermocouples can take the unit off-line.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability Thermocouples are required for unit operation. This project ensures this piece of equipment is reliable and therefore lowers the risk of outage to the generating unit.

System Performance

Security

Compliance

Environmental

Project No: 70716625 AFT Air Inlet Filter Replacement

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
There are 520 filters on the inlet of the Gas Turbine (GT) that provide clean air into the unit. These have a useful life of approximately 7 years in the Afton environment. The existing filters are approaching end of life and require replacement. This project replaces the complete set of filters on the inlet of the GT.

Project Need Justification
Air filters are required to be in good condition and within their useful life to ensure proper gas turbine operation.

Project Alternatives
No alternative

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability This equipment is required to operate the gas turbine to manufactures specifications.

System Performance

Security

Compliance

Environmental

Project No: 70716723 AFT Replace (ACC) Air Cooled Condenser Fan Gearboxes

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This is a continuing project that replaces the old-style gearboxes with a new upgraded design. The existing (old) boxes are prone to oil leaks and premature failure. The new designs have improved seals which has doubled the life as compared to the existing (old) design. This project replaces 2 boxes per year with the new design.

Project Need Justification
This project is required due to historical premature failures on the gearboxes due to loss of lubrication. Tied to the gearbox is a 16ft diameter fan, and the gearbox is hard to get to, as it is located underneath walkways. The new design has improved seals.

Project Alternatives
The alternative is to continue to utilize the aging equipment to failure and assume the risk to operations and environmental compliance. This option is not acceptable. Management has determined the best option is to proactively replace the gearboxes to prevent failure.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The upgraded design gearbox project will benefit customers in all of the PNM territories by providing reliable energy throughout the year and improving safety.

Primary Value Driver Reliability

Safety

Reliability The new style gearbox has an extended life over the existing gearbox, reducing the number of outages.

System Performance

Security

Compliance

Environmental

Project No: 70716822 Afton Burner Management System Upgrade

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description
The duct Burner Management System (BMS) provides the controls to the Heat Recovery Steam Generator (HRSG) duct burners. Failure of the burner system, or loss of communication to the control room, has the potential of derating the steam turbine by approximately 15MW, depending on demand. The current duct system is original to the plant. Key equipment, hardware and parts are becoming obsolete and now need replacement. The BMS upgrade will make supplementary firing more efficient, reliable, and eliminate derates for the duct firing.

Project Need Justification
A duct burner system failure or loss of communication to the control room would cause a 15MW derate throughout a 24-hour period until communication or repairs are completed.

Project Alternatives
A "do-nothing" scenario, where duct burner failure causes a 15MW derate, costs ~\$600K to generation. The chosen alternative is to implement the burner upgrade, which will provide the necessary controls communication from panels to the control board.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The BMS upgrade improvements will benefit customers throughout the PNM territories by providing on-demand, reliable energy from the steam generator.

Primary Value Driver Reliability

Safety

Reliability This project reduces the risk of communication failure due to unreliable components that are becoming obsolete.

System Performance

Security

Compliance

Environmental

Project No: 70716922 Afton Plant HVAC Upgrades 2022

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description

This 2022 project is part of a multi-year initiative to completely replace the aged and failing Heating Ventilation Air Conditioning (HVAC) units utilized for key operating locations in the plant. The intent in 2022 is to replace HVAC units in the Packaged Electrical Electronic Control Center (PEECC) building, Load Commutated Inverter (LCI) building, and Continuous Emission Monitoring System (CEMS) buildings. The PEECC building has turbine controls in it, the LCI building has starter and excitation controls, and the CEMS building has emissions monitoring equipment. There are a total of 5 HVAC units to replace. The PEECC and LEC buildings contain 2 HVAC units each, and the CEMS building contains 1 HVAC unit.

Project Need Justification

HVAC equipment has a limited lifespan, and as aging equipment becomes suspect, it is imperative to refurbish or replace equipment before failures force the closure of the building and affect operations.

Project Alternatives

Alternatives are to continue to utilize the aging equipment to failure and assume the risk to operation and environmental compliance. Management has determined the best option is to replace the HVAC units to ensure the reliability of the units and environmental compliance.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

The HVAC improvements benefit customers in all of the PNM territories by enabling reliable energy during the hot summer months.

Primary Value Driver

Reliability

Safety

Reliability

Replacing this aging equipment maintains equipment properly, preventing premature failure.

System Performance

Security

Compliance

Environmental

Project No: 70716923 AFT Plant HVAC Upgrades 2023

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
One of multiple projects to replace all Heating Ventilation Air Conditioning (HVAC) units in various buildings and enclosures over a period of 3-4 years. The intent of this project is to replace HVAC wall units in the Power Distribution Center (PDC) and the Sample building in 2023. The PDC has turbine controls in it and the Sample building is critical to maintaining water chemistry/steam purity. These are all important and temperature sensitive. The existing units are 20 years old and have been in a dusty, outdoor environment. These units are at end of life and replacement is necessary.

Project Need Justification
HVAC equipment has a limited lifespan, and as aging equipment becomes suspect it is imperative to refurbish or replace before failures force the closure of the building and affect operations.

Project Alternatives
The alternative is to continue to utilize the aging equipment to failure and assume the risk to operations. Management has determined the best option is to replace the HVAC units to ensure the reliability of the units.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The HVAC improvements benefit customers in all of the PNM territories by enabling reliable energy during the hot summer months.

Primary Value Driver Reliability

Safety

Reliability Replacing this aging equipment maintains equipment in the proper environment, preventing premature failure

System Performance

Security

Compliance

Environmental

Project No: 70717023 AFT DM Plant (RO) Reverse Osmosis Membrane Repl

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description

This project replaces failing reverse osmosis (RO) membranes. The demineralized water system provides demineralized water to the condensate storage tank, CTG-1 inlet fogger, water wash tank, and the hydrogen generator. The RO membranes have a usable life of about 3-4 years and must be replaced to ensure the demineralized water quality does not degrade. Without demineralized water, the plant cannot run. The RO membrane replacement will ensure the continued functionality and reliability of the plant.

Project Need Justification

Failed RO membranes would cause a 10% derate for 3 weeks while the new RO membranes were to be sourced, shipped, and installed. It is necessary to replace them proactively.

Project Alternatives

The do nothing alternative risks the reliability of the unit with a potential loss of generation. The recommended alternative is to replace the membranes within the Original Equipment Manufacturer's (OEM) recommendation of no more than a 4 year run cycle.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver

Reliability

Safety

Reliability

Without demineralized water, the plant cannot run. This project ensures the continued reliable operation of the Afton generating station throughout the year.

System Performance

Security

Compliance

Environmental

Project No: 70717223 AFT Well Pump on Production Well

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project is a continuing effort to upgrade the Afton water wells. Afton has a total of 2 wells and pumps that supply plant water. This project replaces the pump in the primary well. Without a reliable supply of raw water to the plant, there is risk of derating and or total shutdown of the power plant. This project will also include an upgrade from the existing leaking lubrication system to upgraded design.

Project Need Justification
The Afton station has a back-up well pump with the secondary well pump, but in a scenario where the primary well pump is out and being sourced for replacement and the secondary pump fails, the plant is dead without water. A 100% derate for 5 days would occur with a new pump being sourced, shipped, and replaced. This project will ensure the primary well pump is reliable and therefore lowers the risk of an outage to the generating unit.

Project Alternatives
There are no viable alternatives or minimized scopes that can be considered in lieu of this well pump replacement project. Afton station reliability is based on water availability from the well pumps.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The customer benefits will be realized by the safe, reliable, environmentally compliant and cost effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability Afton well pumps are required for unit operation. This project will ensure this piece of equipment is reliable and therefore lowers the risk of an outage to the generating unit.

System Performance

Security

Compliance

Environmental

Project No: 70717321 Afton Fogger #4 Pump Replacement

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 7/20/2021

Estimated Completion Date 10/1/2022

Description

This project will replace fogger pump #4. Fogger pump #4 is the largest positive displacement pump on a four-pump inlet fogging skid that is used to pump demineralized water at 3000psi from the pumping skid to spray nozzle manifolds located in the air duct downstream of the filter housing. While gas turbines are very efficient power-generation systems, when the weather gets hot, they lose power output. By mechanically chilling the inlet air before it enters the compressor, this output drop can be avoided. When all four fogger pumps are operating, an additional 16.5MW can be provided. Fogger #4 failed due to a sheared pump shaft and damage to the pump's internal plungers and valves. Failure occurred due to regular wear and tear and lower than expected demineralized water inlet pressures. When fogger #4 is not operating, the unit derates 10MW.

This project will add an upgraded design with 1-9 fog stages managed by the Fog Controller to meet the required load range and temperature during the summer run. The Fog Controller will also help prevent exceeding over-cooling and under-cooling requirements to maintain the required staging level.

Project Need Justification

Fogging equipment is required from May 1 thru October 15 of each year. Without a reliable, operating fogger skid, the unit is derated 10MW. Afton is now required to be operated at full load, longer and more often, due to the San Juan units shutdown.

Project Alternatives

Due to the nature of fogger pump #4's failure (completely sheared shaft), the only alternative is "Do Nothing". This option is not recommended due to the failure occurring several times during a summer run, affecting the unit's reliability.

Project Estimate Approach

The equipment purchase will be awarded based on a design review by stakeholders performed during a vendor proposal comparison. The service order work will be awarded to approved contractors via a competitive bid process. Work will be awarded based on cost, safety performance, and other criteria used to evaluate contractors.

Customer Benefit

The project will benefit customers in all of the PNM territories by providing reliable energy during the hottest periods of the summer run.

Primary Value Driver Reliability

Safety

Reliability A properly functioning fogger system is required for the generator to make full capacity during the summer months.

System Performance

Security

Compliance

Environmental

Project No: 70717423 AFT Automated Wastewater System

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
The current wastewater system relies heavily on manual valve manipulation, and operation of the system can only be done locally. This project will install new control valves and modify the current controls system for wastewater to provide full operation from the Afton Control Room. Automation of the wastewater system will ensure true 24-hour operation and save on chemicals and membrane change-outs by reducing the number of overall starts/shutdowns. The addition of automatic valves will also protect the wastewater equipment from improper start-ups/shutdowns due to incorrect valve positions. Through automation, the system can be shut down in an emergency from the Control Room without having to send an Operator to the building, saving time and improving safety. As Afton becomes more of a base load unit, the wastewater system will become more critical to long-term plant operations.

Project Need Justification
The project's primary objective is aligned with PNM's goal of proactively identifying and minimizing the number of starts/shutdown risk across operations.

Project Alternatives
The alternative is a "do-nothing" scenario where the manipulation and operation of the wastewater system is done locally. This option is not recommended due to the risk of improper valve positioning during startups and shutdowns. The automation of wastewater valving is recommended to provide certain 24-hour operation from the control room.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
The customer benefits by PNM's commitment to operate the Afton Station equipment in a safe, reliant, and most economic fashion.

Primary Value Driver Reliability

Safety

Reliability This wastewater automated valving project ensures the continued, reliable operation of Afton.

System Performance

Security

Compliance

Environmental PNM is required to maintain wastewater equipment for environmental compliance

Project No: 70717723 Afton Lube Oil Vacuum/Filtration Skid

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
The lube oil vacuum / filtration skid removes moisture and filters impurities from the steam turbine lube oil system. The existing skid is original, and some aspects of the system are obsolete. Recent problems have led to elevated water content in the lube oil. This project will replace the existing obsolete skid with a new and improved design.

Project Need Justification
The contamination of the lube oil by water has been a persistent problem. Water contamination will result in rusting of ferrous components, sticking of mechanisms, oil sludging, and the potential of losing bearing life in the steam turbine.

Project Alternatives
With the obsolescence of the existing lube oil filtration system parts, there are no viable alternatives or minimized scopes that can be considered in lieu of replacing the 20 year old skid. A reliability risk of steam turbine component early failure is realized with water contamination in oil, so the recommendation is to replace the lube oil vacuum / filtration skid.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
By replacing the existing lube oil filtration skid, PNM ensures the steam turbine and associated equipment are operating properly and are able to generate electricity in a reliable manner.

Primary Value Driver Reliability

Safety

Reliability
This project will reduce the risk of oil contamination within the steam turbine system and provide reliability. Early steam turbine component failure due to oil contamination is a very costly budget item during an outage.

System Performance

Security

Compliance

Environmental

Project No: 71316024 RGS U3 Recoat Circ Water Pipe

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This project recoats suspect portions of the U3 circulating water pipe. The circulating line provides cooling water to the condenser from the cooling towers. Previous nondestructive examination (NDE) inspections revealed thinning near the circulating pump house. This project will inspect the length of the line and provide 60-80 linear feet to be sandblasted and recoated as necessary. It may be more beneficial and cost effective to re-line the existing pipe based on inspections. This project will look into the various options, procure the necessary materials, and provide the labor to repair the pipe.

Project Need Justification
The project is needed to ensure the continued reliable operation of U3. U3 is typically called for during high demand circumstances and its close proximity to central Albuquerque makes it important that, when called, it is ready for service. Failure of a circulating water line would cause an extended outage, causing unavailability that lasts weeks.

Project Alternatives
This project provides the most cost effective alternative. Other alternatives, such as full replacement or full re-lining of the entire pipe, are much more costly.

Project Estimate Approach
Directs costs were estimated using costs derived from similar work at San Juan Generating Station (GS). Indirect costs (e.g., project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated based on templates for similar sized recent projects.

Customer Benefit
The customer benefits when Reeves GS is available when called upon. This project ensures the continued reliability of the unit.

Primary Value Driver Reliability

Safety

Reliability Failure of a circulating water line would cause an extended outage, causing unavailability that lasts weeks.

System Performance

Security

Compliance

Environmental

Project No: 71316124 Reeves U3 Boiler Waterwall Repl

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This project will replace boiler tubes in a suspect area of the Unit #3 (U3) boiler. Boiler water wall tube failures have been a leading cause of lost generation on U3. These failures have been consistently located at the tube attachment welds to the support channel at the buckstay elevations. These failures are due to "creep" type cracking in the heat affected zone of the tube retaining welds to the support channel iron. Due to the nature of these attachments being located on the external face of the waterwalls and adjacent to the walkways, the project is related to both safety and reliability concerns. This project will target specific bands around the boiler where these buckstays are adjacent to walkways and will approximate 600sqft of water wall tubing.

Project Need Justification
The project is needed to ensure the continued reliability of the unit. The project targets the leading cause of U3 forced outages.

Project Alternatives
Two other alternatives were considered: "Do Nothing" and "Complete Waterwall Replacement". Due to the advanced age of Reeves Generating Station (GS) and the nature of the failures (creep metal fatigue), the first recommendation was to replace all the waterwalls in the U3 boiler. This project would have an expected expense in excess of \$15M. The other alternative of "Do Nothing" is not recommended due the continued reliability issues involved. The proposed project of targeting only the highest risk areas of the waterwalls is the best alternative.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of the PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability Project aims to reduce the leading cause of lost generation on U3.

System Performance

Security

Compliance

Environmental

Project No: 71316322 RGS U2 GSU Diff Relay Upgrade

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description
Currently, the existing generator step up (GSU) transformer differential current protection relay installed on Unit 2 is an electro-mechanical relay. This relay was installed when Reeves was commissioned back in 1959. This relay provides differential current protection for the GSU in the event a difference of current is detected between the high and low voltage terminals of the GSU. This relay is obsolete and needs to be replaced with a new microprocessor-based relay. If the current relay fails, parts are no longer available for repair, so a new relay will have to be purchased and installed. Engineering will scope out the project, purchase all new devices and secure contracts. Engineering will track all projects costs and schedules.

Project Need Justification
North American Electric Reliability Corporation (NERC) requires a functioning protective relay for the GSU. Protective relays are a NERC requirement.

Project Alternatives
The alternative "do nothing" option is to continue to operate the unit with obsolete relay protection. This is not a viable option as NERC requires a functioning protective relay for the GSU.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability With the addition of state of the art transformer protective devices as part of this project, if fault occurs in the future, equipment damage will be limited due to the fast acting digital relays.

System Performance

Security

Compliance Functioning relay equipment is a requirement of NERC PRC-025

Environmental

Project No: 71316422 Reeves U1 Cooling Tower Fill and St

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/24/2022

Estimated Completion Date 10/30/2022

Description
This project will complete the replacement of all fill/drift eliminators in the entire cooling tower as well as the replacement of the support structure. Ongoing inspections have found the cooling tower fill/drift eliminators to be fouled, deformed and causing excessive drift. The wooden structure was found to be in poor condition with deformation and sagging. To ensure the structural integrity of the tower, replacement of structural columns and longitudinal supports is recommended. Additionally, because drift droplets contain the dissolved solids of the circulating water, cooling tower drift is classified as Particulate Matter (PM10) by the Environmental Protection Agency (EPA). As such, limiting excessive drift by ensuring functional eliminators is critical for permit compliance.

Project Need Justification
The project is needed to ensure against a catastrophic cooling tower collapse. Additionally, because drift droplets contain the dissolved solids of the circulating water, cooling tower drift is classified as PM10 by the EPA. As such, limiting excessive drift by ensuring functional eliminators is critical for permit compliance.

Project Alternatives
The "do nothing" alternative is not acceptable due to the risk of tower collapse and environmental impacts due to the EPA classification of the drift droplets. A separate alternative of full tower replacement did not provide a positive return on investment (ROI) for the remaining life of U1.

Project Estimate Approach
Direct costs are estimates provided by the vendor based on actual costs to perform similar work in the past. PNM's indirect costs (e.g., project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated based on similar projects performed in the past.

Customer Benefit
PNM customers will benefit as this project ensures ongoing safe, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety

Reliability Project ensures against catastrophic failure of Reeves U1 Cooling Tower.

System Performance

Security

Compliance Because drift droplets contain the dissolved solids of the circulating water, cooling tower drift is classified as PM10 by the EPA. As such, limiting excessive drift by ensuring functional eliminators is critical for permit compliance.

Environmental

Project No: 71316722 U3 Generator Excitation System

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2024

Description

The excitation system provides field current to the rotating rotor windings of a generator. The Automatic Voltage Regulator (AVR) supplies direct current (DC) to the exciter stator. This adjustment in the field controls the ability of the generator to synchronize itself to the grid and is a North American Electric Reliability Corporation (NERC) requirement. The AVR is made of several cards that control voltage, current and frequency levels to match the grid.

This project involves gathering all of the AVR specifications and programmed parameters, going through the bidding process, and awarding the contract to the selected bidder. Once all equipment is on-site, the contractor will install the AVR and perform all necessary electrical connections and testing. Engineering will coordinate the project's schedule, inspections, installation, and costs.

Project Need Justification

Unit 2's AVR Excitation Controller was installed new in the early 2000s. The life expectancy of the system is determined by the availability of spare and replacement parts. Engineering recommends replacing the AVR Excitation controllers to insure the reliability of the unit.

Project Alternatives

The alternative to this project is to continue using the existing AVR; however, the lack of spare and replacement part availability poses a risk to unit reliability; unplanned failure may keep the unit out of service for an extended period of time.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability The lack of spare and replacement part availability poses a risk to unit reliability; unplanned failure may keep the unit out of service for an extended period of time.

System Performance

Security

Compliance

Environmental

Project No: 71316923 Reeves GS U2 GSU Relay Upgrade

Company: 003 Bulk Power
Location: 713 Reeves Power Station

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project continues the ongoing objective to upgrade the obsolete Reeves protective relays, which are near the end of their useful life. Unit 1's and Unit 3's generator step up (GSU) relays were previously replaced with new state-of-the-art General Electric (GE) T60 relays. This project will install new GSU protective relays on Unit 2, bringing it up to modern standards. GSU protective relays protect against ground faults, differential current, overvoltage, frequency etc. A functional protective relay is a North American Electric Reliability Corporation (NERC) requirement.

Project Need Justification
Unit 2's existing relays are obsolete. With the installation of new, state-of-the-art GE T60 relays, transformer and other equipment protection will be optimized. A functional protective relay is a NERC requirement.

Project Alternatives
The "do nothing" alternative is to continue to operate the unit with obsolete relay protection. This is not a viable option as a functional protective relay is a NERC requirement.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability With the addition of state of the art transformer protective devices, equipment damage will be limited due to the fast acting digital relays if a fault occurs.

System Performance

Security

Compliance A functional protective relay is a NERC requirement.

Environmental

Project No: 74416022 Luna Capital Improvements 2022

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Luna 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description

This is an annual project to cover costs associated with the emergent issues that require the repair or replacement of smaller capital assets at Luna Generating Station (GS) in 2022. This work is essential to maintain and the ensure ongoing safe, compliant, efficient and reliable operation of the plant. Examples of efforts required in 2022 include: replacing HVAC units, replacing the pond liner, extending the steam turbine mezzanine deck, replacing the assembly on Wells 225/228/231, as well as other general improvements.

Please note, this project does not include any capital work related to the 2022 planned outages.

Project Need Justification

This project covers replacement of capital assets at Luna GS that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Examples of efforts required in 2022 include: replacing HVAC units, replacing the pond liner, extending the steam turbine mezzanine deck, replacing the assembly on Wells 225/228/231, as well as other general improvements.

Project Alternatives

The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance of the plant. The alternative to replacing the failed or faulty asset would mean doing nothing which could jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety This project covers the replacement of essential capital assets (like platforms and scaffolding) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance

Security

Compliance

Environmental This project covers the replacement of essential capital assets (like spill containment systems) that ensure environmentally compliant operation of the plant.

Project No: 74416023 Luna Capital Improvements 2023

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Luna 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2024

Description
This is an annual project to cover the emergent replacement of smaller capital assets at Luna Generating Station (GS) in 2023. Covered work orders within this project are typically to replace assets essential to maintain and the ensure ongoing safe, compliant, efficient and reliable operation of the plant.

Project Need Justification
This project covers replacement of capital assets at Luna GS that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance of the plant. The alternative to replacing the failed or faulty asset would mean doing nothing which could jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
This project was estimated using PNM information regarding typical capital asset replacements at the Luna plant in the recent past. Each capital improvement project funded under this project will be evaluated and engineered to address the emergent need in a timely and cost effective manner.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety
This project covers the replacement of essential capital assets (like platforms and scaffolding) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability
This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance
This project covers the replacement of essential capital assets (like control systems) that help to optimize efficient operation of the plant.

Security

Compliance
The project covers the replacement of essential capital assets (like North American Electric Reliability Corporation [NERC] physical security) that ensure compliant operation of the plant.

Environmental
This project covers the replacement of essential capital assets (like spill containment systems) that ensure environmentally compliant operation of the plant.

Project No: 74416026 Luna Capital Improvements 2024

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Luna 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This is an annual project to cover the emergent replacement of smaller capital assets at Luna Generating Station (GS) in 2024. Covered work orders within this project are typically to replace assets essential to maintain and the ensure ongoing safe, compliant, efficient and reliable operation of the plant.

Project Need Justification
This project covers replacement of capital assets at Luna GS that maintain and ensure ongoing safe, compliant, efficient, and reliable operation of the plant. Common types of capital improvements covered by this project include various smaller capital assets like pumps, control system components, structural platforms, and spill-containment systems necessary to operate the plant.

Project Alternatives
The capital improvements covered by this project typically include the replacement of existing assets that are critical either to the operation, or safe maintenance of the plant. The alternative to replacing the failed or faulty asset would mean doing nothing which could jeopardize the operability, reliability, or safe maintenance of the plant.

Project Estimate Approach
This project was estimated using PNM information regarding typical capital asset replacements at the Luna plant in the recent past. Each capital improvement project funded under this project will be evaluated and engineered to address the emergent need in a timely and cost effective manner.

Customer Benefit
PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver Reliability

Safety This project covers the replacement of essential capital assets (like platforms and scaffolding) that protect PNM employees and ensure the ongoing safe operation of the plant.

Reliability This project covers the replacement of essential capital assets (like pumps and cooling pipes) that ensure the reliable operation of the plant.

System Performance This project covers the replacement of essential capital assets (like control systems) that help to optimize efficient operation of the plant.

Security

Compliance The project covers the replacement of essential capital assets (like North American Electric Reliability Corporation [NERC] physical security) that ensure compliant operation of the plant.

Environmental This project covers the replacement of essential capital assets (Selective Catalytic Reduction Systems) that ensure environmentally compliant operation of the plant.

Project No: 74417022 Luna Capital Planned Outage 2022

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Luna 100%

Estimated Start Date 1/1/2022

Estimated Completion Date 12/31/2022

Description
This project is for the capital replacements made during the planned outages at Luna Energy Facility (EF) in 2022. This is for the periodic gas turbine major maintenance which includes Hot Gas Path Inspections, Major Inspections, major Valve Replacements, and other major Capital expenditures. These inspections are done on a prescribed schedule based on gas turbine operating hours and fired starts. Outage capital improvement projects for 2022 at Luna may include: upgrade hot re-heat bypass valve to condenser, motor protection relay upgrades, upgrade main fire protection panel, replace existing actuator on the low-pressure admission control valve, exciter upgrade, cooling tower structure, cooling tower deluge, cooling tower gear box, and duct burner regulator upgrade.

Project Need Justification
In order to ensure reliable and efficient operation for years to come, periodic gas turbine major maintenance, which includes Hot Gas Path Inspections and Major Inspections, must be performed on a prescribed schedule based on gas turbine operating hours and fired starts.

Project Alternatives
The only other option would be to do nothing. This is not a feasible option as these inspections and improvements are needed to ensure the safe and reliable operation of this plant.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine.

Reliability This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure would result in extensive down time and cost.

System Performance

Security

Compliance

Environmental

Project No: 74417123 Luna Capital Planned Outage 2023

Company: 003 Bulk Power
Location: 744 Luna Common all Units

Project Information

County % Hidalgo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project is for the capital replacements made during the planned outages at Luna Energy Facility (EF) in 2023. This is for the periodic gas turbine major maintenance which includes Hot Gas Path Inspections, Major Inspections, major Valve Replacements, and other major Capital expenditures. These inspections are done on a prescribed schedule based on gas turbine operating hours and fired starts.

Project Need Justification
In order to ensure reliable and efficient operation for years to come, periodic gas turbine major maintenance, which includes Hot Gas Path Inspections and Major Inspections, must be performed on a prescribed schedule based on gas turbine operating hours and fired starts. If this maintenance is not completed, the turbines are not fit for operation.

Project Alternatives
The only other option would be to do nothing. This is not a feasible option as these inspections are needed to ensure the safe and reliable operation of this plant.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure could result in serious harm to individuals in the proximity of the combustion turbine.

Reliability This project reduces the risk of catastrophic failure of the combustion turbine. Catastrophic failure would result in extensive down time and cost.

System Performance

Security

Compliance

Environmental

Project No: 75216125 La Luz Turbine Turbine controls Upg

Company: 003 Bulk Power
Location: 752 Gen La Luz Gas Plant

Project Information

County % Valencia 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
The scope of the project will include the replacement of Link Net-HT nodes, the P1020 central processing unit (CPU), and all cables for internal cabinet wiring, termination tee, and Controller Area Network (CAN) open accessories. The upgrade will also include a new Human-Machine Interface (HMI) local and remote computer, which will operate on Windows 10. If any of the system components fail, it will take several weeks to obtain and install spare parts, if they can be found. All necessary hardware, software, licenses and engineering will be provided. Engineering will secure contracts to purchase and install the upgrades. In addition, engineering will track all project's costs and schedules.

Project Need Justification
Many of the current Micro Net system components are no longer supported, and spare parts are difficult to obtain. These systems are used to control the combustion turbine. The existing Link Net nodes continue to fail, making the system unreliable. In addition, the Windows HMI is running on a version of Windows which is no longer supported by Microsoft.

Project Alternatives
The "do nothing" alternative increases reliability risk to the system.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability A control system is required to be current and supported to ensure reliable operation of the turbine.

System Performance

Security

Compliance

Environmental

Project No: 75216221 La Luz Spare GSU Transformer

Company: 003 Bulk Power
Location: 752 Gen La Luz Gas Plant

Project Information

County % Valencia 100%

Estimated Start Date 11/24/2021

Estimated Completion Date 12/31/2022

Description

This project will install a spare Generator Step-Up Transformer (GSU) at La Luz Energy Center to enable the option to connect up to 50MW of temporary generation during times of low resource adequacy. This project significantly reduces the installation time needed when mobilizing temporary generation. GSU availability is one of the most significant concerns about mobilizing rental generators. If needed, this transformer will be sized to connect future permanent generation resources at this site. Due to the commercial operation date (COD) delays with the recent solar and battery projects, PNM is expecting additional resources may be required next year. GSU transformers have very long lead times and without this key piece of equipment, PNM would be unable to quickly scale power at La Luz. Additionally, the GSU transformer provides a key capital spare for La Luz even if additional power is not required in the future. Lead times for GSU Transformers can be around 100 weeks.

Project Need Justification

This project significantly reduces the installation time needed when mobilizing temporary generation. GSU availability is one of the most significant concerns about mobilizing rental generators. If needed, this transformer will be sized to connect future permanent generation resources at this site. Due to the commercial operation date (COD) delays with the recent solar and battery projects, PNM is expecting additional resources may be required next year. GSU transformers have very long lead times and without this key piece of equipment, PNM would be unable to quickly scale power at La Luz. Additionally, the GSU transformer provides a key capital spare for La Luz even if additional power is not required in the future.

Project Alternatives

The "do nothing" alternative is not an option. Given the extended GSU lead times, a spare GSU is needed in order to avoid reliability risks in the event the GSU fails and needs to be replaced.

Project Estimate Approach

Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit

Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability

Safety

Reliability The risk to reliability is improved by avoiding extended lead times to replace the GSU should a failure happen.

System Performance

Security

Compliance

Environmental

Project No: 75516021 Solar Com Project
Company: 003 Bulk Power
Location: 755 Gen Renewable Rider 1

Project Information County % Total System 100%

Estimated Start Date 5/1/2021
Estimated Completion Date 9/30/2022

Description
 The Solar Com project is a communications infrastructure project to improve data access, data acquisition, and secure monitoring and control capability of the PNM owned fleet of 156MW of solar photovoltaic assets. This includes improvements to physical communications infrastructure (e.g., fiber, radio) for increased network reliability as well improvements to the plant level computing, network, and logic infrastructure for secure access and plant control. Risks of not doing the project included lower reliability of communications to solar assets, weaker security for remote access to solar assets, and possible exposure to future North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) standards.

Project Need Justification
 As PNM becomes more reliant upon renewable energy, the importance of receiving real-time data from and control over those assets becomes more important to keep the system reliable. PNM needs the ability to monitor the equipment to verify availability, and have secure remote control capabilities to curtail the generation when necessary.

Project Alternatives
 Possible lower cost alternative is Virtual Private Network (VPN) over Wide Area Network (WAN); however, this does not solve the reliability or security concerns. Risks of not doing the project included lower reliability of communications to solar assets, weaker security for remote access to solar assets, and possible exposure to future NERC CIP standards.

Project Estimate Approach
 Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
 Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Reliability
Safety

Reliability Receiving real-time data from these generating facilities will allow the use of predictive analytics to identify issues before they significantly affect site output, as well as conventional monitoring and alarms.

System Performance

Security

Compliance

Environmental

Security Enhancement Capital Projects

PNM Exhibit RBH-5

Is contained in the following 4 pages.

Project No: 70716523 AFT HMI Upgrade

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
The current turbine control operator interface is based on Windows 7, out of date, and unsupported. New Human-Machine Interfaces (HMI's) are based on Windows 10 and feature improved features, protection, and support. A new HMI system will refresh the ability to control, backup, and secure the system while providing a modern, easy-to-navigate display.

Project Need Justification
Control systems are required to be supported and up to date to ensure maintainability and security. The current turbine control operator HMI is out of date and unsupported and therefore needs to be replaced.

Project Alternatives
There is no alternative. Control systems are required to be supported and up to date to ensure maintainability and security. The current turbine control operator HMI is out of date and unsupported and therefore needs to be replaced.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Security

Safety

Reliability

System Performance

Security This project ensures that the control system is up to date, supported, and secure.

Compliance

Environmental

Project No: 70716623 AFT U1 Turbine MARK VIE Major Cntr

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description

This project will upgrade the major turbine controls from the current Mark VI to the Mark VI-E distributed control system to improve plant reliability and security. The current Mark VI controls platform was retired in 2009 and lifecycle support ended in 2019. Parts and technical support are becoming a challenge for the old system. The new controls system will provide upgraded controllers, bringing hardware, security, and support features up to date. Also, the new Mark VI-E system brings the right basis needed for available upgrades and improvements in the future. Additional features, such as alarm management improvements, analyzing diagnostics and trending, are added bonuses.

Project Need Justification

Control systems are required to be supported and current to ensure maintainability and security. The current Mark VI controls platform was retired in 2009 and lifecycle support ended in 2019. It is necessary to upgrade to the distributed control system.

Project Alternatives

The do nothing alternative is not an option. It is necessary to upgrade to the distributed control system.

Project Estimate Approach

This project was estimated using PNM information regarding typical capital asset replacements in the recent past. This project will be competitively bid, and acceptable alternative vendors to GE will be considered.

Customer Benefit

PNM customers will benefit as the capital replacements covered by this project ensure ongoing safe, efficient, reliable, and cost-effective operation of the plant.

Primary Value Driver

Security

Safety

Current and supported control systems are required to ensure secure, safe and reliable operation of the generating unit.

Reliability

Current and supported control systems are required to ensure secure, safe and reliable operation of the generating unit.

System Performance

Security

Current and supported control systems are required to ensure secure, safe and reliable operation of the generating unit.

Compliance

Environmental

Compliance Enhancement Capital Projects

PNM Exhibit RBH-6

Is contained in the following 26 pages.

Project No: 04616023 Rio Bravo PDC Battery Replacement

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project will replace the batteries used in the Rio Bravo Power Distribution Center (PDC). PDC batteries supply continuous direct current power to critical PDC loads that are required to be in operation upon loss of normal plant power due to abnormal plant conditions. Critical loads, breaker control, and Distributive Control System (DCS) must remain in service to safely shut down equipment and systems during an unexpected plant outage or system failure.

Project Need Justification
Batteries typically last 5-7 years; existing batteries are at the end of this life span and funding should be allocated for replacement. A properly functioning uninterruptible power supply (UPS) is required for both safety and compliance.

Project Alternatives
There is no alternative for this project, these batteries must be replaced for safety and compliance reasons.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Compliance

Safety
In the event of an unexpected plant outage or system failure, continuous direct current (DC) power supply to critical PDC loads is imperative for a safe shut down of plant equipment and systems. Loss of this power could result in catastrophic equipment failure that would endanger employees.

Reliability
In the event of an unexpected plant outage or system failure, continuous direct current (DC) power supply to critical PDC loads is imperative for a safe shut down of plant equipment and systems. Loss of this power could result in catastrophic equipment failure, which would keep the unit out of service for extended periods of time.

System Performance

Security

Compliance
DC Station Supply is covered in multiple North American Electric Reliability Corporation (NERC) requirements, such as PRC-005-6, which requires them to be included in a time-based maintenance program.

Environmental

Project No: 04616123 Rio Bravo PECC Battery Replacement

Company: 003 Bulk Power
Location: 046 Rio Bravo

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project will replace the batteries used in the Rio Bravo Packaged Electrical Control Center (PECC). PECC batteries supply continuous direct current (DC) power to critical station loads that are required to be in operation upon loss of normal plant power due to abnormal plant conditions. Critical loads, such as relay power supplies, breaker-tripping power, etc. must remain in service to safely shut down equipment and systems during an unexpected plant outage or system failure.

Project Need Justification
Batteries typically last 5-7 years; existing batteries are at the end of this life span and funding should be allocated for replacement. A properly functioning uninterruptible power system (UPS) is required for both safety and compliance.

Project Alternatives
There is no alternative for this project, these batteries must be replace for safety and compliance reasons.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Compliance

Safety
In the event of an unexpected plant outage or system failure, continous DC power supply to relays and breakers is imperative for a safe shut down of plant equipment and sytems. Loss of this power could result in catastrophic equipment failure that would endanger employees.

Reliability
In the event of an unexpected plant outage or system failure, continous DC power supply to relays and breakers is imperative for a safe shut down of plant equipment and sytems. Loss of this power could result in catastrophic equipment failure, which would keep the unit out of service for extended periods of time.

System Performance

Security

Compliance
DC Station Supply is covered in multiple North American Electric Reliability Corporation (NERC) requirements, such as PRC-005-6, which requires them to be included in a time-based maintenance program.

Environmental

Project No: 70716424 Afton PDC Battery Replacement

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
This project will replace the batteries used in the Afton Power Distribution Center (PDC). The PDC batteries supply continuous direct current power to critical PDC and Heat Recovery Steam Generator (HRSG) system loads that are required to be in operation upon loss of normal plant power due to abnormal plant conditions. Critical loads, such as the steam turbine generator (STG), breaker control, STG protection systems, STG voltage regulation, and the Distributive Control System (DCS) must remain in service to safely shut down equipment and systems during an unexpected plant outage or system failure.

Project Need Justification
Batteries typically last 5-7 years; the existing batteries are at the end of this lifespan and need to be replaced. A properly functioning uninterruptible power source (UPS) is required for both safety and compliance.

Project Alternatives
There is no alternative for this project. These batteries must be replaced for safety and compliance reasons.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Compliance

Safety In the event of an unexpected plant outage or system failure, continuous direct current (DC) power supply to critical PDC loads is imperative for a safe shut down of plant equipment and systems. Loss of this power could result in catastrophic equipment failure that would endanger employees.

Reliability In the event of an unexpected plant outage or system failure, continuous DC power supply to critical PDC loads is imperative for a safe shut down of plant equipment and systems. Loss of this power could result in catastrophic equipment failure, which would keep the unit out of service for extended periods of time.

System Performance

Security

Compliance DC Station Supply is covered in multiple North American Electric Reliability Corporation (NERC) requirements, such as PRC-005-6, which requires them to be included in a time-based maintenance program.

Environmental

Project No: 70717823 Afton PECC Battery Replacement

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
This project will replace the batteries used in the Afton Packaged Electrical Control Center (PECC). PECC batteries supply continuous direct current power to critical station loads that are required to be in operation upon loss of normal plant power due to abnormal plant conditions. Critical loads, such as relay power supplies and breaker-tripping power must remain in service to safely shut down equipment and systems during an unexpected plant outage or system failure.

Project Need Justification
Batteries typically last 5-7 years; the existing batteries are at the end of this lifespan and need to be replaced. A properly functioning uninterruptible power source (UPS) is required for both safety and compliance.

Project Alternatives
There is no alternative for this project. These batteries must be replaced for safety and compliance reasons.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Compliance

Safety
In the event of an unexpected plant outage or system failure, continuous direct current (DC) power supply to relays and breakers is imperative for a safe shut down of plant equipment and systems. Loss of this power could result in catastrophic equipment failure that would endanger employees.

Reliability
In the event of an unexpected plant outage or system failure, continuous direct current (DC) power supply to relays and breakers is imperative for a safe shut down of plant equipment and systems. Loss of this power could result in catastrophic equipment failure, which would keep the unit out of service for extended periods of time.

System Performance

Security

Compliance
DC Station Supply is covered in multiple North American Electric Reliability Corporation (NERC) requirements, such as PRC-005-6, which requires them to be included in a time-based maintenance program.

Environmental

Project No: 71519017 Four Corners Facility Improvements

Company: 003 Bulk Power
Location: 715 Four Corners Power Station

Project Information

County % San Juan 100%

Estimated Start Date 1/1/2017

Estimated Completion Date 12/31/2024

Description
This project covers multiple facility improvements projects at Four Corners, a plant that is operated by Arizona Public Service Electric (APS), and funded by a consortium of utilities including APS and PNM. This project's activities were initiated after those in project 71519210.

Project Need Justification
As the primary operator of the Four Corners plant, APS identifies capital projects that need to be performed. These projects are assigned to one of following categories: Safety, Environmental, Regulatory, Strategic, Reliability.

At the time a project is identified, the project is assigned to a budget category. APS' Plant, Finance, and Projects departments work together to assign the category. Projects that fall under a specific safety regulation (i.e., OHSA), code or standard (e.g., Boiler Code, National Fire Protection Association [NFPA]), or that pose an obvious risk to personnel or equipment, are classified as Safety (examples may include safety access platforms or electrical arc protection). Projects that fall under a specific environmental regulation (e.g., Clean Air Act [CAA], Mercury and Air Toxic Standards [MATS], and Coal Combustion Residuals [CCR]) or the project is related to an environmental system (e.g., Baghouse, Scrubber, Ponds) are classified as Environmental (examples may include baghouse bag replacements or improvements to the sulfur scrubber controls). Projects that fall under a specific regulation (e.g., Critical Infrastructure Protection [CIP], State Laws) are classified as Regulatory. Projects that have O&M savings or Equivalent Availability Factor (EAF) impact are classified as Reliability (examples may include equipment such as pump, compressor or other equipment replacements). Projects related to Cultural, Community, Facilities, IT and Communications are classified as Strategic.

The System Health process is conducted by APS by breaking down its plants into many different process areas and systems. These process areas are assigned to subject matter experts (SME) or process teams who act as the system health experts. The SME/team has the responsibility to evaluate system health for these process areas based on equipment condition and performance parameters. The SME/team reviews and evaluates system issues including equipment reliability issues, forced outage related information, corrective maintenance history, work order backlog, vendor bulletins, etc. and assigns a system health color (Green, White, Yellow or Red) to the system. Systems or process areas with yellow or red colors require a system health plan to move the system back to white or green. The plan may include a capital project to address the system health. Full evaluations occur once a year. System colors and plans are evaluated

Project Alternatives
Numerous alternatives are considered on a project by project basis which are recorded in individual project request documentation. The APS Capital Project process can be referenced for project alternatives evaluations. Often times, large scale projects will be preceded by an engineering study that typically outlines the number of alternatives and benefits/costs of the various alternatives.

Project Estimate Approach
Projects are estimated by APS Capital projects group by utilizing an independent third party engineering firm. The APS Engineering Service Provider (ESP) has a team of engineers/resources who develops project scopes, cost estimates and milestone schedules leveraging data and experience from past projects with similar scopes.

Customer Benefit
Customers benefit with continued ongoing safe, reliable, regulatory compliant and cost-effective management and operation of power generation assets.

Primary Value Driver Compliance

Safety This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Reliability This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

System Performance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Security

Compliance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Environmental This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No:

71519017 Four Corners Facility Improvements

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	64,659,469	907,400	1,067,820	1,048,320	1,148,160	892,450	866,320	70,589,939
426: Capitalized Interest	1,805	-	-	-	-	-	-	1,805
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	522,963	7,441	8,756	8,596	9,415	7,318	7,104	571,592
928: AFUDC Debt	558,666	11,568	12,550	13,882	14,178	15,221	15,712	641,777
929: AFUDC Equity	1,020,993	27,764	30,122	33,320	34,028	36,533	37,711	1,220,471
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	(55,845,085)	(289,530)	(112,181)	(890,308)	(286,237)	(546,559)	(2,271,046)	(60,240,946)
825: Closing Cost of Removal	(3,065,845)	(4,266)	(2,109)	(19,603)	(7,189)	(14,818)	(65,485)	(3,179,314)
Project Net	7,852,967	660,377	1,004,957	194,207	912,355	390,145	(1,409,685)	9,605,324

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	70,589,939	838,899	659,499	1,730,829	1,307,753	849,122	803,500	643,248	169,079	879,009	679,454	706,234	3,685,324	83,541,889
426: Capitalized Interest	1,805	-	-	-	-	-	-	-	-	-	-	-	-	1,805
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	571,592	6,879	5,408	14,193	10,724	6,963	6,589	5,275	1,386	7,208	5,572	5,791	30,220	677,798
928: AFUDC Debt	641,777	20,680	21,873	24,185	27,264	27,673	27,020	26,377	26,605	27,379	29,018	30,079	33,520	963,449
929: AFUDC Equity	1,220,471	26,381	27,902	30,851	34,779	35,301	34,467	33,647	33,938	34,925	37,016	38,370	42,759	1,630,807
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(60,240,946)	(203,622)	(106,587)	(61,322)	(902,561)	(1,161,995)	(1,056,969)	(341,715)	(198,321)	(37,609)	(230,272)	(552,597)	(6,471,395)	(71,565,912)
825: Closing Cost of Removal	(3,179,314)	(6,232)	(3,388)	(2,116)	(32,544)	(42,887)	(39,820)	(13,065)	(7,584)	(1,466)	(9,085)	(22,046)	(274,003)	(3,633,550)
Project Net	9,605,324	682,985	604,706	1,736,620	445,415	(285,822)	(225,213)	353,766	25,103	909,446	511,702	205,830	(2,953,576)	11,616,286

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	83,541,889	3,087,192	3,087,192	3,087,192	1,889,468	565,086	565,086	565,086	565,086	565,086	565,086	565,086	565,086	99,213,621
426: Capitalized Interest	1,805	-	-	-	-	-	-	-	-	-	-	-	-	1,805
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	677,798	25,315	25,315	25,315	15,494	4,634	4,634	4,634	4,634	4,634	4,634	4,634	4,634	806,307
928: AFUDC Debt	963,449	22,669	27,838	32,980	22,134	23,639	22,345	22,853	22,531	22,226	21,938	21,666	21,410	1,247,679
929: AFUDC Equity	1,630,807	39,296	48,255	57,169	38,369	40,976	38,734	39,615	39,056	38,528	38,029	37,557	37,112	2,123,503
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(71,565,912)	(141,571)	(170,476)	(8,509,099)	(398,512)	(1,325,845)	(319,180)	(783,093)	(772,266)	(762,039)	(752,379)	(743,253)	(12,243,886)	(98,487,512)
825: Closing Cost of Removal	(3,633,550)	(6,282)	(7,785)	(396,025)	(18,811)	(62,592)	(15,074)	(36,992)	(36,492)	(36,022)	(35,580)	(35,165)	(579,573)	(4,899,943)
Project Net	11,616,286	3,026,619	3,010,340	(5,702,467)	1,548,141	(754,102)	296,544	(187,897)	(177,452)	(167,588)	(158,272)	(149,475)	(12,195,217)	5,460

Project No: 71519117 Four Corners Facility - Switchyard

Company: 003 Bulk Power
Location: 715 Four Corners Power Station

Project Information

County % San Juan 100%

Estimated Start Date 1/1/2017

Estimated Completion Date 12/31/2027

Description This project covers switchyard capital improvements at Four Corners, a plant that is operated by Arizona Public Service Electric (APS), and funded by a consortium of utilities including APS and PNM.

Project Need Justification Projects in the switchyard of Four Corners are reviewed and scheduled after agreement by a majority of the consortium of owners of the facility. Typically these projects involve adherence to safety hazards, maintenance of regulatory compliance, improvement of system reliability, and/or optimization of maintenance costs. The decision to move forward with any of these projects is determined by a majority of the owners of the facility, and financial participation is contractually obligated for all facility owners.

Project Alternatives Each project is evaluated on its own merit for possible alternatives to ensure the recommended project path approved is the most viable option. Funds for this project are contractually obligated.

Project Estimate Approach Estimates for each project, depending on type, will use previous similar projects for reference, vendor quotes for equipment, contractor installation budgetary quotes, and engineering and project manager estimates.

Customer Benefit Customer benefit is realized by safe, reliable, regulatory compliant and cost-effective management of power generation assets.

Primary Value Driver Compliance

Safety This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Reliability This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

System Performance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Security

Compliance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Environmental This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No: 71519210 Four Corners Facility Improvements

Company: 003 Bulk Power
Location: 715 Four Corners Power Station

Project Information

County % San Juan 100%

Estimated Start Date 10/1/2008

Estimated Completion Date 12/31/2024

Description
This project covers multiple facility improvements projects at Four Corners, a plant that is operated by Arizona Public Service Electric (APS), and funded by a consortium of utilities including APS and PNM. This project's activities were initiated before those in project 71519017.

Project Need Justification
As the primary operator of the Four Corners plant, APS identifies capital projects that need to be performed. These projects are assigned to one of following categories: Safety, Environmental, Regulatory, Strategic, Reliability.

At the time a project is identified, the project is assigned to a budget category. APS' Plant, Finance, and Projects departments work together to assign the category. Projects that fall under a specific safety regulation (i.e., OSHA), code or standard (e.g., Boiler Code, National Fire Protection Association [NFPA]), or that post an obvious risk to personnel or equipment, are classified as Safety (examples may include safety access platforms or electrical arc protection). Projects that fall under a specific environmental regulation (e.g., Clean Air Act [CAA], Mercury and Air Toxic Standards [MATS], and Coal Combustion Residuals [CCR]) or the project is related to an environmental system (e.g., Baghouse, Scrubber, Ponds) are classified as Environmental (examples may include baghouse bag replacements or improvements to the sulfur scrubber controls). Projects that fall under a specific regulation (e.g., Critical Infrastructure Protection [CIP], State Laws) are classified as Regulatory. Projects that have O&M savings or Equivalent Availability Factor (EAF) impact are classified as Reliability (examples may include equipment such as pump, compressor or other equipment replacements). Projects related to Cultural, Community, Facilities, IT and Communications are classified as Strategic.

The System Health process is conducted by APS by breaking down its plants into many different process areas and systems. These process areas are assigned to subject matter experts (SME) or process teams who act as the system health experts. The SME/team has the responsibility to evaluate system health for these process areas based on equipment condition and performance parameters. The SME/team reviews and evaluates system issues including equipment reliability issues, forced outage related information, corrective maintenance history, work order backlog, vendor bulletins, etc. and assigns a system health color (Green, White, Yellow or Red) to the system. Systems or process areas with yellow or red colors require a system health plan to move the system back to white or green. The plan may include a capital project to address the system health. Full evaluations occur once a year. System colors and plans are evaluated at least

Project Alternatives
Numerous alternatives are considered on a project by project basis which are recorded in individual project request documentation. The APS Capital Project process can be referenced for project alternatives evaluations. Often times, large scale projects will be preceded by an engineering study that typically outlines the number of alternatives and benefits/costs of the various alternatives.

Project Estimate Approach
Projects are estimated by APS Capital projects group by utilizing an independent third party engineering firm. The APS Engineering Service Provider (ESP) has a team of engineers/resources who develops project scopes, cost estimates and milestone schedules

Customer Benefit
Customers benefit with continued ongoing safe, reliable, regulatory compliant and cost-effective management and operation of power generation assets.

Primary Value Driver Compliance

Safety This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Reliability This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

System Performance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Security

Compliance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Environmental This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No: 72123410 PV U1
Company: 003 Bulk Power
Location: 721 Palo Verde Unit 1

Project Information County % MaricopaAZ 100%

Estimated Start Date 2/2/2010
Estimated Completion Date 1/31/2028

Description
 These are multiple projects that maintain the nuclear reactor, steam generator, turbine generator and related nuclear safety components at Palo Verde Nuclear Generating Station (PVNGS) Unit 1.

Project Need Justification
 Palo Verde completes capital projects annually to maintain the facility in compliance with Nuclear Regulatory Commission regulations and to provide the highest capacity factor that is economically justified.

Project Alternatives
 There are no other alternatives for this project, as it is contractually obligated. With a 10.2% ownership of PVNGS, PNM is one of seven parties to a Participation Agreement that runs through 2047. This contract provides the only alternative for review of capital projects recommended by the Operating Agent. Projects are evaluated by Palo Verde. If the project is new and not a replacement of like equipment or required by NRC guidelines, alternatives are evaluated by Palo Verde. These alternatives are presented with Palo Verde's recommended action and the Owners then vote on the project.

Project Estimate Approach
 Palo Verde uses AACE (Association for the Advancement of Cost Engineering) standards for cost estimations. These standards are recognized by the Department of Energy (DOE) through DOE G 413.3-21.

Customer Benefit
 Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

- Primary Value Driver** Compliance
- Safety** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Reliability** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- System Performance** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Security**
- Compliance** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Environmental** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No:	72123410	PV U1										
	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22				
110: Straight Time-General	391	-	-	-	-	-	-	391				
120: Overtime-General	-	-	-	-	-	-	-	-				
350: Material Issues-Major	-	-	-	-	-	-	-	-				
370: Outside Services	-	-	-	-	-	-	-	-				
374: Outside Services Legal	-	-	-	-	-	-	-	-				
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-				
391: Jt Proj Bill to PNM -N Lab	47,398,678	225,748	227,210	204,070	177,328	184,750	213,471	48,631,255				
426: Capitalized Interest	-	-	-	-	-	-	-	-				
610: Expenses - General	(607,940)	-	-	-	-	-	-	(607,940)				
805: Land and Land Rights	-	-	-	-	-	-	-	-				
807: Non Refundable Contrib	-	-	-	-	-	-	-	-				
829: Construction Adjustment	-	-	-	-	-	-	-	-				
909: Luna AR - Other	-	-	-	-	-	-	-	-				
913: Payroll Taxes	27	-	-	-	-	-	-	27				
914: Pension and Benefits	139	-	-	-	-	-	-	139				
915: Injuries and Damages	12	-	-	-	-	-	-	12				
918: San Juan AR-Labor	-	-	-	-	-	-	-	-				
921: Stores Load	-	-	-	-	-	-	-	-				
922: Minor Material Load	-	-	-	-	-	-	-	-				
925: E&S Loads	-	-	-	-	-	-	-	-				
926: A&G Loads	388,675	1,851	1,863	1,673	1,454	1,515	1,750	398,782				
928: AFUDC Debt	836,969	6,602	6,765	7,092	6,276	5,891	6,191	875,787				
929: AFUDC Equity	1,222,907	15,845	16,238	17,022	15,064	14,140	14,860	1,316,075				
937: San Juan AR - Other	-	-	-	-	-	-	-	-				
961: Luna A&G PNM R D&V	-	-	-	-	-	-	-	-				
825: Closing Addition	(42,989,317)	(125,763)	-	(787,676)	(469,722)	-	(555,559)	(44,928,037)				
825: Closing Cost of Removal	(1,283,468)	(13,887)	-	(81,860)	(47,505)	-	(52,903)	(1,479,622)				
Project Net	4,967,073	110,396	252,076	(639,678)	(317,104)	206,296	(372,189)	4,206,870				

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	391	-	-	-	-	-	-	-	-	-	-	-	-	391
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	48,631,255	13,563	30,309	28,835	41,992	86,748	82,716	105,783	236,188	200,040	442,454	175,156	43,244	50,118,282
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	(607,940)	-	-	-	-	-	-	-	-	-	-	-	-	(607,940)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	27	-	-	-	-	-	-	-	-	-	-	-	-	27
914: Pension and Benefits	139	-	-	-	-	-	-	-	-	-	-	-	-	139
915: Injuries and Damages	12	-	-	-	-	-	-	-	-	-	-	-	-	12
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	398,782	111	249	236	344	711	678	867	1,937	1,640	3,628	1,436	355	410,976
928: AFUDC Debt	875,787	8,420	8,506	8,608	8,723	8,897	9,114	9,309	9,111	9,604	9,702	10,146	10,115	986,044
929: AFUDC Equity	1,316,075	10,741	10,851	10,981	11,127	11,350	11,627	11,875	11,623	12,251	12,376	12,943	12,904	1,456,723
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNM R D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(44,928,037)	-	-	-	-	-	(20,327)	(279,941)	-	(286,495)	(112,007)	(143,195)	(1,475,681)	(47,245,683)
825: Closing Cost of Removal	(1,479,622)	-	-	-	-	-	(1,815)	(24,581)	-	(23,750)	(8,841)	(11,069)	(113,079)	(1,662,757)
Project Net	4,206,870	32,836	49,914	48,661	62,186	107,706	81,994	(176,688)	258,859	(86,709)	347,313	45,416	(1,522,143)	3,456,215

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	391	-	-	-	-	-	-	-	-	-	-	-	-	391
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	50,118,282	12,626	18,416	31,851	22,376	13,159	25,278	36,319	37,906	56,495	36,896	39,198	30,837	50,479,639
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	(607,940)	-	-	-	-	-	-	-	-	-	-	-	-	(607,940)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	27	-	-	-	-	-	-	-	-	-	-	-	-	27
914: Pension and Benefits	139	-	-	-	-	-	-	-	-	-	-	-	-	139
915: Injuries and Damages	12	-	-	-	-	-	-	-	-	-	-	-	-	12
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	410,976	104	151	261	183	108	207	298	311	463	303	321	253	413,939
928: AFUDC Debt	986,044	5,990	6,006	6,062	6,058	6,056	6,060	6,070	6,143	6,229	6,338	6,433	6,522	1,060,011
929: AFUDC Equity	1,456,723	10,384	10,411	10,507	10,500	10,499	10,505	10,523	10,648	10,798	10,986	11,151	11,306	1,584,941
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNM R D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(47,245,683)	(22,705)	(9,839)	(45,109)	(34,335)	(33,251)	(40,520)	(12,236)	(14,236)	(1,869)	(1,372)	(1,575)	(93,585)	(47,556,315)
825: Closing Cost of Removal	(1,662,757)	(1,729)	(744)	(3,380)	(2,553)	(2,456)	(2,969)	(888)	(1,024)	(133)	(97)	(110)	(6,486)	(1,685,326)
Project Net	3,456,215	4,670	24,402	193	2,230	(5,885)	(1,439)	40,085	39,747	71,984	53,054	55,417	(51,153)	3,689,519

Project No: 72223410 PV U2
Company: 003 Bulk Power
Location: 722 Palo Verde Unit 2

Project Information County % MaricopaAZ 100%

Estimated Start Date 2/2/2010

Estimated Completion Date 1/31/2028

Description
 These are multiple projects that maintain the nuclear reactor, steam generator, turbine generator and related nuclear safety components at Palo Verde Nuclear Generating Station (PVNGS) Unit 2.

Project Need Justification
 Palo Verde completes capital projects annually to maintain the facility in compliance with Nuclear Regulatory Commission regulations and to provide the highest capacity factor that is economically justified.

Project Alternatives
 There are no other alternatives for this project, as it is contractually obligated. With a 10.2% ownership of PVNGS, PNM is one of seven parties to a Participation Agreement that runs through 2047. This contract provides the only alternative for review of capital projects recommended by the Operating Agent. Projects are evaluated by Palo Verde. If the project is new and not a replacement of like equipment or required by NRC guidelines, alternatives are evaluated by Palo Verde. These alternatives are presented with Palo Verde's recommended action and the Owners then vote on the project.

Project Estimate Approach
 Palo Verde uses AACE (Association for the Advancement of Cost Engineering) standards for cost estimations. These standards are recognized by the Department of Energy (DOE) through DOE G 413.3-21.

Customer Benefit
 Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Compliance

Safety This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Reliability This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

System Performance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Security

Compliance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Environmental This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No:	72223410	PV U2										
	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22				
110: Straight Time-General	-	-	-	-	-	-	-	-				
120: Overtime-General	-	-	-	-	-	-	-	-				
350: Material Issues-Major	-	-	-	-	-	-	-	-				
370: Outside Services	-	-	-	-	-	-	-	-				
374: Outside Services Legal	-	-	-	-	-	-	-	-				
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-				
391: Jt Proj Bill to PNM -N Lab	50,826,929	272,732	220,882	161,047	159,876	76,323	197,866	51,915,655				
426: Capitalized Interest	-	-	-	-	-	-	-	-				
610: Expenses - General	(1,164,558)	-	-	-	-	-	-	(1,164,558)				
805: Land and Land Rights	-	-	-	-	-	-	-	-				
807: Non Refundable Contrib	-	-	-	-	-	-	-	-				
829: Construction Adjustment	-	-	-	-	-	-	-	-				
909: Luna AR - Other	-	-	-	-	-	-	-	-				
913: Payroll Taxes	-	-	-	-	-	-	-	-				
914: Pension and Benefits	-	-	-	-	-	-	-	-				
915: Injuries and Damages	-	-	-	-	-	-	-	-				
918: San Juan AR-Labor	-	-	-	-	-	-	-	-				
921: Stores Load	-	-	-	-	-	-	-	-				
922: Minor Material Load	-	-	-	-	-	-	-	-				
925: E&S Loads	-	-	-	-	-	-	-	-				
926: A&G Loads	416,781	2,236	1,811	1,321	1,311	626	1,623	425,709				
928: AFUDC Debt	1,061,001	7,556	7,935	8,227	8,263	8,466	8,027	1,109,474				
929: AFUDC Equity	1,567,369	18,135	19,044	19,746	19,832	20,320	19,265	1,683,713				
937: San Juan AR - Other	-	-	-	-	-	-	-	-				
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-				
825: Closing Addition	(45,916,185)	-	(7,458)	(160,363)	-	(474,926)	(403,722)	(46,962,655)				
825: Closing Cost of Removal	(633,066)	-	(1,204)	(25,192)	-	(71,528)	(58,837)	(789,827)				
Project Net	6,158,272	300,660	241,009	4,786	189,282	(440,718)	(235,779)	6,217,511				

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	51,915,655	158,240	261,311	751,127	2,492,729	491,533	194,038	161,655	172,355	168,709	136,609	93,636	133,363	57,130,960
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	(1,164,558)	-	-	-	-	-	-	-	-	-	-	-	-	(1,164,558)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	425,709	1,298	2,143	6,159	20,440	4,031	1,591	1,326	1,413	1,383	1,120	768	1,094	468,474
928: AFUDC Debt	1,109,474	11,657	12,152	10,980	12,138	15,166	10,320	10,521	10,778	11,187	11,549	11,569	10,786	1,248,278
929: AFUDC Equity	1,683,713	14,870	15,501	14,007	15,484	19,346	13,165	13,421	13,749	14,270	14,732	14,758	13,759	1,860,776
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(46,962,655)	-	(1,076,165)	(1,073,985)	(69,737)	(2,650,714)	(103,758)	(66,836)	-	(5,043)	(129,993)	(506,155)	(1,336,257)	(53,981,297)
825: Closing Cost of Removal	(789,827)	-	(146,358)	(129,747)	(6,070)	(219,122)	(8,312)	(5,215)	-	(374)	(9,432)	(36,157)	(93,468)	(1,444,082)
Project Net	6,217,511	186,065	(931,416)	(421,458)	2,464,985	(2,339,762)	107,044	114,870	198,296	190,133	24,585	(421,582)	(1,270,722)	4,118,551

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	57,130,960	63,761	102,595	87,107	83,367	98,580	141,459	206,332	1,129,262	1,417,097	2,980,907	769,907	112,113	64,323,448
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	(1,164,558)	-	-	-	-	-	-	-	-	-	-	-	-	(1,164,558)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	468,474	523	841	714	684	808	1,160	1,692	9,260	11,620	24,443	6,313	919	527,452
928: AFUDC Debt	1,248,278	6,934	6,088	6,283	6,458	6,075	6,049	5,611	6,521	8,730	12,615	15,296	12,305	1,347,243
929: AFUDC Equity	1,860,776	12,020	10,553	10,891	11,195	10,530	10,486	9,727	11,303	15,134	21,867	26,514	21,330	2,032,326
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(53,981,297)	(571,451)	(1,541)	(3,318)	(320,328)	(148,667)	(431,254)	(165,232)	(39,133)	(22,688)	(385,211)	(2,139,412)	(3,335,676)	(61,545,208)
825: Closing Cost of Removal	(1,444,082)	(39,377)	(104)	(219)	(20,757)	(9,426)	(26,565)	(9,764)	(1,962)	(997)	(14,506)	(78,103)	(120,637)	(1,766,498)
Project Net	4,118,551	(527,591)	118,434	101,458	(239,382)	(42,099)	(298,665)	48,366	1,115,252	1,428,897	2,640,116	(1,399,484)	(3,309,646)	3,754,205

Project No: 72323410 PV U3
Company: 003 Bulk Power
Location: 723 Palo Verde Unit 3

Project Information County % MaricopaAZ 100%

Estimated Start Date 2/2/2010

Estimated Completion Date 1/31/2028

Description
 These are multiple projects that maintain the nuclear reactor, steam generator, turbine generator and related nuclear safety components at Palo Verde Nuclear Generating Station (PVNGS) Unit 3.

Project Need Justification
 Palo Verde completes capital projects annually to maintain the facility in compliance with Nuclear Regulatory Commission regulations and to provide the highest capacity factor that is economically justified.

Project Alternatives
 There are no other alternatives for this project, as it is contractually obligated. With a 10.2% ownership of PVNGS, PNM is one of seven parties to a Participation Agreement that runs through 2047. This contract provides the only alternative for review of capital projects recommended by the Operating Agent. Projects are evaluated by Palo Verde. If the project is new and not a replacement of like equipment or required by NRC guidelines, alternatives are evaluated by Palo Verde. These alternatives are presented with Palo Verde's recommended action and the Owners then vote on the project.

Project Estimate Approach
 Palo Verde uses AACE (Association for the Advancement of Cost Engineering) standards for cost estimations. These standards are recognized by the Department of Energy (DOE) through DOE G 413.3-21.

Customer Benefit
 Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver Compliance

Safety This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Reliability This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

System Performance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Security

Compliance This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Environmental This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No:

	72323410	PV U3										
	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22				
110: Straight Time-General	13,343	-	-	-	-	-	-	13,343				
120: Overtime-General	-	-	-	-	-	-	-	-				
350: Material Issues-Major	-	-	-	-	-	-	-	-				
370: Outside Services	-	-	-	-	-	-	-	-				
374: Outside Services Legal	-	-	-	-	-	-	-	-				
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-				
391: Jt Proj Bill to PNM -N Lab	51,534,708	350,181	1,241,415	1,515,330	1,650,419	727,884	110,597	57,130,534				
426: Capitalized Interest	946,388	-	-	-	-	-	-	946,388				
610: Expenses - General	(496,468)	-	-	-	-	-	-	(496,468)				
805: Land and Land Rights	-	-	-	-	-	-	-	-				
807: Non Refundable Contrib	-	-	-	-	-	-	-	-				
829: Construction Adjustment	-	-	-	-	-	-	-	-				
909: Luna AR - Other	-	-	-	-	-	-	-	-				
913: Payroll Taxes	888	-	-	-	-	-	-	888				
914: Pension and Benefits	4,000	-	-	-	-	-	-	4,000				
915: Injuries and Damages	339	-	-	-	-	-	-	339				
918: San Juan AR-Labor	-	-	-	-	-	-	-	-				
921: Stores Load	-	-	-	-	-	-	-	-				
922: Minor Material Load	-	-	-	-	-	-	-	-				
925: E&S Loads	-	-	-	-	-	-	-	-				
926: A&G Loads	422,623	2,871	10,180	12,426	13,533	5,969	907	468,508				
928: AFUDC Debt	331,095	8,761	9,918	11,896	14,170	15,592	11,153	402,584				
929: AFUDC Equity	561,362	21,028	23,804	28,552	34,010	37,422	26,768	732,945				
937: San Juan AR - Other	-	-	-	-	-	-	-	-				
961: Luna A&G PNM D&V	-	-	-	-	-	-	-	-				
825: Closing Addition	(47,868,934)	-	-	-	(220,816)	(3,610,156)	(1,088,699)	(52,788,605)				
825: Closing Cost of Removal	(622,048)	-	-	-	23,947	361,287	106,693	(130,121)				
Project Net	4,827,297	382,841	1,285,316	1,568,203	1,515,264	(2,462,002)	(832,582)	6,284,337				

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	13,343	-	-	-	-	-	-	-	-	-	-	-	-	13,343
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	57,130,534	93,222	284,866	146,966	157,255	177,517	216,444	121,449	140,481	218,753	137,288	258,695	237,338	59,320,809
426: Capitalized Interest	946,388	-	-	-	-	-	-	-	-	-	-	-	-	946,388
610: Expenses - General	(496,468)	-	-	-	-	-	-	-	-	-	-	-	-	(496,468)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	888	-	-	-	-	-	-	-	-	-	-	-	-	888
914: Pension and Benefits	4,000	-	-	-	-	-	-	-	-	-	-	-	-	4,000
915: Injuries and Damages	339	-	-	-	-	-	-	-	-	-	-	-	-	339
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	468,508	764	2,336	1,205	1,289	1,456	1,775	996	1,152	1,794	1,126	2,121	1,946	486,469
928: AFUDC Debt	402,584	14,772	3,964	4,438	4,728	4,861	3,050	3,411	3,632	4,018	4,401	4,840	5,216	463,915
929: AFUDC Equity	732,945	18,843	5,056	5,662	6,031	6,201	3,891	4,351	4,633	5,126	5,614	6,174	6,653	811,181
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNM D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(52,788,605)	(5,301,103)	-	(24,842)	(113,999)	(1,057,972)	(4,649)	(33,955)	(4,596)	(5,531)	-	(80,289)	(399,010)	(59,814,551)
825: Closing Cost of Removal	(130,121)	509,040	-	1,813	7,594	63,670	229	1,505	181	184	-	1,994	8,367	464,457
Project Net	6,284,337	(4,664,462)	296,223	135,242	62,899	(804,267)	220,739	97,757	145,482	224,343	148,429	193,536	(139,490)	2,200,770

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	13,343	-	-	-	-	-	-	-	-	-	-	-	-	13,343
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	59,320,809	189,111	329,264	724,551	2,474,652	407,205	189,821	264,785	276,292	410,312	304,343	149,914	120,644	65,161,705
426: Capitalized Interest	946,388	-	-	-	-	-	-	-	-	-	-	-	-	946,388
610: Expenses - General	(496,468)	-	-	-	-	-	-	-	-	-	-	-	-	(496,468)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	888	-	-	-	-	-	-	-	-	-	-	-	-	888
914: Pension and Benefits	4,000	-	-	-	-	-	-	-	-	-	-	-	-	4,000
915: Injuries and Damages	339	-	-	-	-	-	-	-	-	-	-	-	-	339
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	486,469	1,551	2,700	5,941	20,292	3,339	1,557	2,171	2,266	3,365	2,496	1,229	989	534,364
928: AFUDC Debt	463,915	4,093	3,685	4,641	7,465	9,131	4,735	4,759	4,812	5,224	5,597	5,849	6,105	530,010
929: AFUDC Equity	811,181	7,095	6,387	8,044	12,940	15,827	8,208	8,249	8,341	9,056	9,703	10,138	10,583	925,753
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNM D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(59,814,551)	(495,398)	(766)	(27,702)	(522,810)	(2,766,928)	(225,135)	(252,084)	(123,977)	(161,118)	(100,755)	(7,360)	(1,357,963)	(65,856,548)
825: Closing Cost of Removal	464,457	8,882	10	157	(2,285)	(14,564)	(1,351)	(1,751)	(970)	(1,435)	(962)	(72)	(13,559)	436,556
Project Net	2,200,770	(284,666)	341,280	715,632	1,990,254	(2,345,990)	(22,165)	26,130	166,762	265,404	220,422	159,698	(1,233,200)	2,200,330

Project No: 72423410 PV Common
Company: 003 Bulk Power
Location: 724 Palo Verde Common All Units

Project Information County % MaricopaAZ 100%

Estimated Start Date 2/2/2010
Estimated Completion Date 1/31/2028

Description
 These are multiple projects that maintain the nuclear reactor, steam generator, turbine generator and related nuclear safety components at the Palo Verde Nuclear Generating Station (PVNGS) common facilities.

Project Need Justification
 Palo Verde completes capital projects annually to maintain the facility in compliance with Nuclear Regulatory Commission regulations and to provide the highest capacity factor that is economically justified.

Project Alternatives
 There are no other alternatives for this project, as it is contractually obligated. With a 10.2% ownership of PVNGS, PNM is one of seven parties to a Participation Agreement that runs through 2047. This contract provides the only alternative for review of capital projects recommended by the Operating Agent. Projects are evaluated by Palo Verde. If the project is new and not a replacement of like equipment or required by NRC guidelines, alternatives are evaluated by Palo Verde. These alternatives are presented with Palo Verde's recommended action and the Owners then vote on the project.

Project Estimate Approach
 Palo Verde uses AACE (Association for the Advancement of Cost Engineering) standards for cost estimations. These standards are recognized by the Department of Energy (DOE) through DOE G 413.3-21.

Customer Benefit
 Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

- Primary Value Driver** Compliance
- Safety** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Reliability** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- System Performance** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Security**
- Compliance** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Environmental** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No:

	72423410	PV Common						
	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	570	-	-	-	-	-	-	570
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	53,214,863	272,346	427,832	482,560	362,091	289,166	245,683	55,294,541
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	(204,017)	-	-	-	-	-	-	(204,017)
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	(958,800)	-	-	-	-	-	-	(958,800)
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	4	-	-	-	-	-	-	4
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	436,367	2,233	3,508	3,957	2,969	2,371	2,015	453,420
928: AFUDC Debt	1,798,124	18,132	18,648	18,973	19,243	19,661	19,878	1,912,656
929: AFUDC Equity	2,707,803	43,518	44,757	45,537	46,186	47,188	47,709	2,982,698
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	(43,484,809)	(42,759)	(283,918)	(291,262)	(91,931)	(178,015)	(221,451)	(44,594,146)
825: Closing Cost of Removal	(163,310)	(2,075)	(13,443)	(13,433)	(4,154)	(7,910)	(9,695)	(214,020)
Project Net	13,346,793	291,395	197,383	246,331	334,404	172,461	84,138	14,672,905

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	570	-	-	-	-	-	-	-	-	-	-	-	-	570
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	55,294,541	221,924	287,514	392,119	366,648	278,444	315,253	507,458	299,305	539,731	502,242	286,153	277,068	59,568,400
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	(204,017)	-	-	-	-	-	-	-	-	-	-	-	-	(204,017)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	(958,800)	-	-	-	-	-	-	-	-	-	-	-	-	(958,800)
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	4	-	-	-	-	-	-	-	-	-	-	-	-	4
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	453,420	1,820	2,358	3,215	3,007	2,283	2,585	4,161	2,454	4,426	4,118	2,346	2,272	488,466
928: AFUDC Debt	1,912,656	30,094	30,678	31,542	32,444	33,234	33,936	34,692	35,597	36,033	37,282	32,512	32,193	2,312,894
929: AFUDC Equity	2,982,698	38,389	39,134	40,236	41,387	42,394	43,290	44,255	45,409	45,966	47,558	41,473	41,067	3,493,255
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(44,594,146)	(46,075)	-	(22,708)	(21,730)	(39,127)	(128,905)	(52,817)	(291,026)	(10,543)	(2,719,492)	(502,746)	(926,629)	(49,355,942)
825: Closing Cost of Removal	(214,020)	(1,990)	-	(946)	(889)	(1,579)	(5,122)	(2,055)	(11,163)	(396)	(100,217)	(18,269)	(33,216)	(389,862)
Project Net	14,672,905	244,163	359,683	443,457	420,867	315,650	261,038	535,694	80,575	615,217	(2,228,508)	(158,530)	(607,245)	14,954,966

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	570	-	-	-	-	-	-	-	-	-	-	-	-	570
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	59,568,400	95,144	293,874	193,807	284,385	281,700	196,867	888,881	249,095	184,541	173,392	144,941	146,171	62,701,197
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	(204,017)	-	-	-	-	-	-	-	-	-	-	-	-	(204,017)
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	(958,800)	-	-	-	-	-	-	-	-	-	-	-	-	(958,800)
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	4	-	-	-	-	-	-	-	-	-	-	-	-	4
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	488,466	780	2,410	1,589	2,332	2,310	1,614	7,289	2,043	1,513	1,422	1,189	1,199	514,155
928: AFUDC Debt	2,312,894	26,009	26,185	26,451	24,207	24,762	25,026	25,947	25,832	26,021	25,629	25,992	26,182	2,621,136
929: AFUDC Equity	3,493,255	45,085	45,391	45,851	41,961	42,923	43,382	44,978	44,778	45,106	44,426	45,055	45,386	4,027,575
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(49,355,942)	(165,563)	(165,302)	(1,558,258)	(37,513)	(157,325)	(93,368)	(698,585)	(180,008)	(466,579)	(25,708)	(109,047)	(2,652,803)	(55,666,001)
825: Closing Cost of Removal	(389,862)	(5,887)	(5,794)	(54,018)	(1,282)	(5,300)	(3,110)	(22,549)	(5,740)	(14,727)	(803)	(3,378)	(81,448)	(593,898)
Project Net	14,954,966	(4,431)	196,765	(1,344,578)	314,089	189,070	170,411	245,961	135,999	(224,125)	218,357	104,751	(2,515,314)	12,441,921

Project No: 72523410 PV water reclamation
Company: 003 Bulk Power
Location: 725 Palo Verde Wtr Rec Facility

Project Information

County % MaricopaAZ 100%

Estimated Start Date 2/2/2010
Estimated Completion Date 1/31/2028

Description
 These are multiple projects that maintain the nuclear reactor, steam generator, turbine generator and related nuclear safety components at Palo Verde Nuclear Generating Station (PVNGS) water reclamation facilities.

Project Need Justification
 Palo Verde completes capital projects annually to maintain the facility's compliance with Nuclear Regulatory Commission regulations and to provide the highest capacity factor that is economically justified.

Project Alternatives
 There are no other alternatives for this project, as it is contractually obligated. With a 10.2% ownership of PVNGS, PNM is one of seven parties to a Participation Agreement that runs through 2047. This contract provides the only alternative for review of capital projects recommended by the Operating Agent. Projects are evaluated by Palo Verde. If the project is new and not a replacement of like equipment or required by NRC guidelines, alternatives are evaluated by Palo Verde. These alternatives are presented with Palo Verde's recommended action and the Owners then vote on the project.

Project Estimate Approach
 Palo Verde uses AACE (Association for the Advancement of Cost Engineering) standards for cost estimations. These standards are recognized by the Department of Energy (DOE) through DOE G 413.3-21.

Customer Benefit
 Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

- Primary Value Driver** Compliance
- Safety** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Reliability** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- System Performance** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Security**
- Compliance** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.
- Environmental** This project contains multiple items that affect various components that could impact safety, regulatory compliance and reliability.

Project No:

72523410 PV water reclamation

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	31,286,463	118,450	100,448	294,036	205,643	154,102	218,717	32,377,859
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	256,549	971	824	2,411	1,686	1,264	1,793	265,498
928: AFUDC Debt	584,154	2,962	3,126	3,404	3,763	4,027	4,262	605,698
929: AFUDC Equity	853,687	7,108	7,502	8,171	9,031	9,666	10,230	905,396
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	(29,653,288)	(13)	(4,582)	-	-	(28,097)	(72,068)	(29,758,048)
825: Closing Cost of Removal	(511,645)	(5)	(1,568)	-	-	(7,659)	(18,422)	(539,298)
Project Net	2,815,920	129,473	105,750	308,023	220,123	133,303	144,513	3,857,105

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	32,377,859	235,529	152,071	187,972	332,712	188,502	234,455	176,560	190,996	285,398	189,862	147,536	191,947	34,891,397
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	265,498	1,931	1,247	1,541	2,728	1,546	1,923	1,448	1,566	2,340	1,557	1,210	1,574	286,109
928: AFUDC Debt	605,698	6,764	7,196	7,581	5,152	5,624	4,407	4,852	5,237	5,754	6,272	6,529	6,895	677,959
929: AFUDC Equity	905,396	8,628	9,179	9,671	6,571	7,174	5,621	6,189	6,681	7,340	8,000	8,328	8,796	997,575
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(29,758,048)	-	-	(1,414,381)	(42,158)	(791,382)	-	(7,947)	-	-	(57,015)	(7,034)	(276,089)	(32,354,054)
825: Closing Cost of Removal	(539,298)	-	-	(310,371)	(8,268)	(146,262)	-	(1,263)	-	-	(7,505)	(892)	(33,521)	(1,047,380)
Project Net	3,857,105	252,851	169,693	(1,517,986)	296,737	(734,798)	246,406	179,838	204,480	300,831	141,170	155,676	(100,398)	3,451,607

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	34,891,397	204,451	243,676	254,616	236,455	46,387	42,011	104,662	45,001	113,049	161,551	41,719	65,908	36,450,883
426: Capitalized Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	286,109	1,677	1,998	2,088	1,939	380	344	858	369	927	1,325	342	540	298,897
928: AFUDC Debt	677,959	5,706	6,124	6,586	7,039	7,140	3,016	2,912	3,034	2,699	2,912	2,917	2,985	731,029
929: AFUDC Equity	997,575	9,891	10,616	11,416	12,201	12,377	5,229	5,048	5,260	4,679	5,047	5,057	5,174	1,089,569
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMNR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(32,354,054)	-	(1,600)	(4,172)	(99,975)	(2,358,088)	(137,587)	(12,415)	(271,644)	(22,199)	(103,428)	(22,731)	(348,986)	(35,736,878)
825: Closing Cost of Removal	(1,047,380)	-	(176)	(439)	(10,094)	(235,303)	(13,465)	(1,166)	(25,006)	(1,952)	(8,595)	(1,856)	(27,801)	(1,373,233)
Project Net	3,451,607	221,725	260,638	270,095	147,565	(2,527,108)	(100,452)	99,899	(242,985)	97,203	58,812	25,449	(302,180)	1,460,266

Project No: 75216024 La Luz Replace SCR Catalysts

Company: 003 Bulk Power
Location: 752 Gen La Luz Gas Plant

Project Information

County % Valencia 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description
The purpose of the Selective Catalytic Reduction (SCR) catalyst is to reduce the amount of nitrogen oxide (NOx) gas emitted out of the stack of the combustion turbine. A defined limit of NOx is established by the La Luz air permit and PNM is required to meet the State and Federal clean air standards. The SCR lances, structure and catalysts are routinely inspected for cleanliness, seals and integrity. Sample catalyst is also sent to a lab for analysis on effectiveness and remaining life. Recent analysis indicates the catalyst bed is nearing end of life and replacement is expected in 2-3 years at the current run profile. Engineering will secure contracts to purchase and install the new catalyst. In addition, engineering will track all projects costs and schedules.

Project Need Justification
The project is needed to ensure the environmentally compliant operation of the plant.

Project Alternatives
There are no alternatives, La Luz Generating Station (GS) will not be able to operate without a properly functioning SCR catalyst.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funding during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by environmentally compliant management of PNM's power generation assets.

Primary Value Driver Compliance

Safety

Reliability

System Performance

Security

Compliance
The purpose of the SCR catalyst is to reduce the amount of NOx gas emitted out of the stack of the combustion turbine. A defined limit of NOx is established by the La Luz air permit and PNM is required to meet the State and Federal clean air standards.

Environmental
The purpose of the SCR catalyst is to reduce the amount of NOx gas emitted out of the stack of the combustion turbine. A defined limit of NOx is established by the La Luz air permit and PNM is required to meet the State and Federal clean air standards.

System Performance Capital Projects

PNM Exhibit RBH-7

Is contained in the following 16 pages.

Project No: 35730721 21-03 UPS Replacements for WPM

Company: 003 Bulk Power
Location: 357 Bulk Power Building Allocation

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2021

Estimated Completion Date 6/30/2023

Description Replacement of the 2 existing uninterruptable power source (UPS) units at the Wholesale Power Marketing operations location is required. The current units have exceeded their useful life as recommended by the manufacturer and validated by a recent third-party facility assessment. The UPS units are critical to Wholesale Power Marketing operations, and the project scope will include improvements to all supporting infrastructure (e.g., panelboards, switchgear, HVAC [heating, ventilation and air conditioning] modifications, etc.).

Project Need Justification This project provides backup power for critical loads during power interruptions. Loss of these critical loads could cause loss of communication to the Wholesale Power Marketing who provide essential functions for grid operations.

Project Alternatives A "do-nothing" scenario is not an option. These units are critical and must be replaced.

Project Estimate Approach Project direct costs are estimated from vendor/contractor estimates as well as from historical actuals from similar projects PNM has performed in the past. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and combined to the estimated direct costs to create the total project estimate.

Customer Benefit Customer benefits will be realized by the safe, reliable, environmentally compliant, and cost-effective management of PNM's power generation assets.

Primary Value Driver System Performance

Safety

Reliability

System Performance UPS units ensure continuity of operations in the event of a power failure.

Security

Compliance

Environmental

Project No: 70028222 IRP Nodal Production Cost Modeling

Company: 003 Bulk Power
Location: 700 Production Division

Project Information

County % Bernalillo 100%

Estimated Start Date 4/1/2022

Estimated Completion Date 12/31/2022

Description

In order to better assess the effects of intermittent generation, energy storage, charging and discharging, and transmission impacts on generation planning and dispatch, PNM needs a fully nodal production cost model and associated database. The integrated resource plan (IRP) currently does not leverage this modeling software. This limits the IRP's ability to capture transmission impacts on the location of generation resources, dispatch, curtailments, etc. This leads to sub-optimal planning and ultimately higher costs of purchasing power. Using a proper nodal model for planning will allow PNM to assess transmission impacts on the location and dispatch of generation resources. This will lead to a more optimal and reliable system.

PNM plans to acquire these capabilities by adding to its existing Encompass license.

Project Need Justification

The intent of the software is to help properly identify the most economic and reliable resources to deploy at various locations. For example, with this software, financial net present value (NPV) calculations can be done based on hypothetical scenarios where power needs to be purchased at higher rates due to generating assets not being located at the most strategic locations. Further NPV calculations could be done based on hypothetical scenarios of implementing the wrong resource at a much higher cost than otherwise necessary. The project is needed to ensure the right resources are properly placed.

Project Alternatives

PNM considered the PLEXOS platform from Energy Exemplar, but after a number of presentations to Resource Planning and Transmission Planning (the model will be used by both groups), adding to the existing Encompass license was approximately 40% of the cost of switching to the PLEXOS platform.

Project Estimate Approach

Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit

Customer benefits will be realized by implementing the most cost-effective resources across locations.

Primary Value Driver

System Performance

Safety

Reliability

In expanding modeling options, PNM will be able to implement a more optimal, cost-effective, and reliable system.

System Performance

In expanding modeling options, PNM will be able to implement a more optimal, cost-effective, and reliable system.

Security

Compliance

Environmental

Project No: 70028323 ICCP Upgrade/Replacement

Company: 003 Bulk Power
Location: 700 Production Division

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2027

Description
This project is to replace the Inter-Control Center Communications Protocol (ICCP) with the Distributed Network Protocol 3 (DNP3) for Automatic Generation Control (AGC) to improve the maintainability of the communication between Power Operations and generating sites. This project adds Remote Terminal Units (RTU) at each generation site and configures the energy management system (EMS) to accept the DNP3 signal from the new RTUs.

Project Need Justification
Currently Automatic Generation Control (AGC) is the only control signal coming from the energy management system (EMS) that is utilizing the ICCP communication protocol within PNM. The EMS commonly utilizes the DNP3 communication protocol in other applications. Switching the AGC communication from ICCP to DNP3 helps to standardize the control system and removes the need for 'one-off' training and skills to maintain and troubleshoot the equipment should a failure happen. The Automatic Generation Control communications are critical to grid operation. It is essential that this line of communication is easily maintained and secure.

Project Alternatives
The do nothing alternative is to continue to utilize ICCP for AGC. This option adds risk due to the limited application of ICCP in the PNM network, requiring "one-off" training and support.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowance for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver System Performance

Safety

Reliability

System Performance Reliable and secure communication between Power Operations and generation sites ensures optimal performance

Security

Compliance

Environmental

Project No:

70028323 ICCP Upgrade/Replacement

	BegBal-Jul-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	EndBal-22
110: Straight Time-General	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	-	-	-
374: Outside Services Legal	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	-	-	-
610: Expenses - General	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	-	-	-
928: AFUDC Debt	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	-	-	-
825: Closing Cost of Removal	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-

	BegBal-23	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	EndBal-23
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	-	-	-	-	-	95,000	-	-	-	-	95,000	47,500	-	237,500
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	-	-	-	-	-	141	-	-	-	-	152	386	-	680
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	-	-	-	-	-	3,411	-	-	-	-	3,411	1,705	-	8,526
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	-	-	-	-	-	(98,552)	-	-	-	-	-	(148,154)	-	(246,706)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	-	98,563	(98,563)	-	-

	BegBal-24	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	EndBal-24
110: Straight Time-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120: Overtime-General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
350: Material Issues-Major	-	-	-	-	-	-	-	-	-	-	-	-	-	-
370: Outside Services	237,500	-	-	-	-	-	-	-	-	94,000	94,000	45,500	-	471,000
374: Outside Services Legal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
377: Outside Svcs-Temp Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
391: Jt Proj Bill to PNM -N Lab	-	-	-	-	-	-	-	-	-	-	-	-	-	-
426: Capitalized Interest	680	-	-	-	-	-	-	-	-	170	509	765	-	2,124
610: Expenses - General	-	-	-	-	-	-	-	-	-	-	-	-	-	-
805: Land and Land Rights	-	-	-	-	-	-	-	-	-	-	-	-	-	-
807: Non Refundable Contrib	-	-	-	-	-	-	-	-	-	-	-	-	-	-
829: Construction Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
909: Luna AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
913: Payroll Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
914: Pension and Benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
915: Injuries and Damages	-	-	-	-	-	-	-	-	-	-	-	-	-	-
918: San Juan AR-Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
921: Stores Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
922: Minor Material Load	-	-	-	-	-	-	-	-	-	-	-	-	-	-
925: E&S Loads	-	-	-	-	-	-	-	-	-	-	-	-	-	-
926: A&G Loads	8,526	-	-	-	-	-	-	-	-	4,089	4,089	1,979	-	18,684
928: AFUDC Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-
929: AFUDC Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-
937: San Juan AR - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
961: Luna A&G PNMR D&V	-	-	-	-	-	-	-	-	-	-	-	-	-	-
825: Closing Addition	(246,706)	-	-	-	-	-	-	-	-	-	-	(245,102)	-	(491,807)
825: Closing Cost of Removal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Project Net	-	-	-	-	-	-	-	-	-	98,259	98,598	(196,858)	-	-

Project No: 70528020 Asset Management Engineering Tools

Company: 003 Bulk Power
Location: 705 Bulk Power Projects

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2020

Estimated Completion Date 12/31/2027

Description
This project purchases and configures hardware and software specifically designed to implement and optimize asset management practices and strategies into multiple PNM business systems, including the maintenance management system, document management system and real time systems.

Project Need Justification
Effective reliability asset management and compliance programs include operational and maintenance practices. These practices include items such as preventative maintenance, predictive maintenance, failure analysis and monitoring, and diagnostic data. Software tools are required to implement, optimize and monitor the effectiveness of these practices in the maintenance management system.

Project Alternatives
The "do-nothing" alternative risks sub-optimization of the asset management program leading to higher risk of equipment failure.

Project Estimate Approach
Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects PNM has performed in the past. PNM indirect costs (project controls, contingency, AFUDC, etc.) are estimated and combined to the estimated direct costs to create the total project estimate.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver System Performance

Safety This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

Reliability This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

System Performance This project improves efficiencies around the operation and maintenance of equipment by streamlining workflows and improving the quality of information.

Security

Compliance This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

Environmental This project reduces the risk of catastrophic failure of various components that could result in safety incidents, regulatory compliance incidents and reduced reliability.

Project No: 70528040 Renewable Forecasting System

Company: 003 Bulk Power
Location: 705 Bulk Power Projects

Project Information

County % Valencia 100%

Estimated Start Date 8/5/2020

Estimated Completion Date 8/1/2022

Description
This project will develop an internal system to monitor and forecast renewable site output. PNM will purchase and install an Infrared Sky-Imagery Camera to provide more precise near-term forecasting data, and integrate the higher resolution data with existing forecasting services.

Project Need Justification
Accurate forecasting of both photovoltaic and wind generation output is critical to adequately plan both demand management and asset management activities. As higher penetrations of renewable resources are reached, accurate forecasting will become even more crucial.

The current forecasting solutions and services in use are resulting in excessive forecasting errors and must be improved to allow for higher penetrations of renewable resources.

Project Alternatives
The project alternative is to do nothing and to continue to use data provided by forecasting services as-is. This alternative is not sufficient. The current forecasting solutions and services in use are resulting in excessive forecasting errors and must be improved to allow for higher penetrations of renewable resources.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver System Performance

Safety

Reliability Accurate renewable forecasting will improve system reliability by improving unit scheduling and dispatch.

System Performance Accurate renewable forecasting will improve system performance by allowing the most efficient scheduling of BESS charge/discharge and other generating resources.

Security

Compliance

Environmental

Project No: 70717523 Afton Sys One Vibration Analysis

Company: 003 Bulk Power
Location: 707 Afton-1

Project Information

County % Dona Ana 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description
The existing vibration monitoring equipment on both the gas turbine and the steam turbine currently requires Afton plant personnel to procure a technical representatives and hardware from Baker Hughes. This project will procure the necessary hardware, server, software and licensing to allow constant vibration monitoring on the Afton turbines.

Project Need Justification
Safe operation of a gas turbine requires the rotor to be balanced with low vibration. High vibration can cause catastrophic failure. Monitoring systems are critical to ensuring that problems are caught and addressed early. Depending on a third party for services and hardware delays the identification and mediation of equipment issues.

Project Alternatives
The "do-nothing" alternative is to continue to procure technical reps and hardware from Baker Hughes; however, this causes delays in the identification and mediation of equipment issues.

Project Estimate Approach
Not required for projects with less than \$250,000 of expenditures.

Customer Benefit
Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver System Performance

Safety

Reliability

System Performance This project will enable PNM to no longer require third party support and hardware for vibration monitoring equipment, improving efficiency

Security

Compliance

Environmental

Project No: 73128124 2023 Gas Management Solutions-Luna JOU Upgrade

Company: 003 Bulk Power
Location: 731 PNM Marketing

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2023

Estimated Completion Date 12/31/2023

Description

This project will implement a system that will enable Luna participants to manage their shares of the plant. The solution will also manage gas burns and allocations, and enforce participant shares on an hourly basis, taking into account unit derates and ambient temperature capacity. This management system will enable PNM to more accurately schedule the plant in the energy imbalance market (EIM) and thereby reduce uninstructed energy charges.

The project will meet the following objectives via software and related implementation and integration services:

- Create an equitable hourly availability matrix for each plant participant based on unit outages, derates, and ambient limits, and lower participant schedules accordingly.
- Allow participants to dial-in schedules with greater specificity to maximize unit output and minimize missed opportunities for asset optimization
- Lower costs by reducing EIM uninstructed imbalance charges

Project Need Justification

Implementation of this functionality will enable PNM, as operators of the Luna plant, to better manage participant shares during times when the unit is derated for maintenance or ambient temperature swings. The automated calculation and notification process will ensure precise availability is communicated to the participants in a timely manner, thus eliminating disputes and after-the-fact (ATF) adjustments. It will also ensure the California Independent System Operator (CAISO) is notified accurately and timely, increasing EIM participation and minimizing uninstructed energy charges. This project is required to improve Luna's participation in the CAISO EIM market. This management system will enable PNM to more accurately schedule the plant in the EIM and thereby reduce uninstructed energy charges.

Project Alternatives

Power Costs Inc. (PCI) was approached early on to see if they could develop a Jointly Owned Resource (JOU) tool, including this functionality, and they declined due to the difficulty of the factors involved. The other alternative of "Do Nothing" is sub optimal because failing to implement the upgrade will result in increasing manual work, including manual unit availability communication to participants, resulting in information not being distributed in a timely manner to CAISO. This often leads to uninstructed energy charges.

Project Estimate Approach

Not required for projects with less than \$250,000 of expenditures.

Customer Benefit

The primary customer benefit will result from increased reliability in running and scheduling the Luna plant.

Primary Value Driver System Performance

Safety

Reliability Reliably running PNM's fleet is increasingly important with San Juan coming offline in the near future. The better PNM can dial in the dispatch, the better it can manage fuel needs, O&M costs, and ultimately the wear and tear on the unit.

System Performance This management system will enable PNM to more accurately schedule the plant in the CAISO EIM, and thereby reduce uninstructed energy charges.

Security

Compliance

Environmental

Project No: 73128224 Emerging Market Tool

Company: 003 Bulk Power
Location: 731 PNM Marketing

Project Information

County % Bernalillo 100%

Estimated Start Date 1/1/2024

Estimated Completion Date 12/31/2024

Description

This project implements a system that will enable PNM to participate in emerging markets such as California Independent System Operator's (CAISO) Extended Day-Ahead Market (EDAM). At this time, requirements are still being developed, however at a minimum a Generation Optimization tool will be needed to manage bids, settlements, etc. for each new market. The project will optimally meet the following objectives via software and related implementation and integration services:

- Interface with multiple other applications to create unit commitment, manage fuel needs, process settlement data, etc.
- Efficiently dispatch resources in an organized day-ahead market to optimize generation and save customers money

Project Need Justification

The Generation Optimization tool will enable Wholesale Power Marketing (WPM) traders to more economically and reliably dispatch the PNM generation fleet. It will take into account public outage information, weather data, unit characteristics, and more and will develop an optimum unit dispatch plan. The biggest risk associated with not having an optimization tool is that the ratepayers may miss out on asset optimization opportunities and thus will not realize the maximum benefits of market participation.

Project Alternatives

The do nothing alternative risks missing the benefits to market participation. Specific products will be evaluated through an RFP process where the successful product will be chosen based on factors such as functionality, cost and maintainability.

Project Estimate Approach

Project direct costs are estimated from vendor/contractor estimates as well as historical actuals from similar projects. PNM indirect costs (project controls, contingency, AFUDC [allowances for funds used during construction], etc.) are estimated and added to the direct costs.

Customer Benefit

Customer benefits will be realized by the safe, reliable, environmentally compliant and cost-effective management of PNM's power generation assets.

Primary Value Driver System Performance

Safety

Reliability

System Performance This project gives PNM the ability to improve unit dispatch.

Security

Compliance

Environmental

Capital Investment Projects Below \$25,000

PNM Exhibit RBH-8

Is contained in the following 1 page.

PNM Exhibit RBH - 8
Capital Project Clearings under \$25,000

Project Code	Project Name	Capital Investment Period Clearings
70716422	Afton Replace ACC Fan Gearboxes 202	\$ 17,262
70716423	AFT Replace Polaris Ranger	15,988
70716521	AFT21-05 Compressor Bleed Valve Rep	3,392
70716522	Afton Gas Turbine Flex Seal Repl	(1,383)
70716621	Afton Control Room Ergonomic Upgrad	9,682
71316821	Reeves Admin Computer and Network D	5,982
73128141	WPM - UPlan	(1,239)
73616017	65MW Transfer	3
74416021	Luna Capital Improvements 2021	14,869
74416315	Luna Capital Improvements	(5,302)
74416415	Luna Capital Improvements 2019	824
75216022	La Luz RO Membrane in DM System	20,000
Total		\$ 80,078

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

**IN THE MATTER OF THE APPLICATION)
OF PUBLIC SERVICE COMPANY OF NEW)
MEXICO FOR REVISION OF ITS RETAIL)
ELECTRIC RATES PURSUANT TO ADVICE)
NOTICE NO. 595)
)
PUBLIC SERVICE COMPANY OF NEW)
MEXICO,)
)
Applicant)**

Case No. 22-00270-UT

SELF AFFIRMATION

R. BRENT HEFFINGTON, Managing Director of Generation, PNM upon penalty of perjury under the laws of the State of New Mexico, affirm and state: I have read the foregoing **Direct Testimony of R. Brent Heffington** and it is true and accurate based on my own personal knowledge and belief.

Dated this 5th day of December, 2022.

/s/ R. Brent Heffington
R. BRENT HEFFINGTON