

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE JOINT APPLICATION OF)
AVANGRID, INC., AVANGRID NETWORKS, INC., NM)
GREEN HOLDINGS, INC., PUBLIC SERVICE COMPANY)
OF NEW MEXICO AND PNM RESOURCES, INC. FOR)
APPROVAL OF THE MERGER OF NM GREEN)
HOLDINGS, INC. WITH PNM RESOURCES, INC.;)
APPROVAL OF A GENERAL DIVERSIFICATION PLAN;)
AND ALL OTHER AUTHORIZATIONS AND APPROVALS)
REQUIRED TO CONSUMMATE AND IMPLEMENT THIS)
TRANSACTION) Case No. 20-00222-UT
)
AVANGRID, INC., AVANGRID NETWORKS, INC.,)
NM GREEN HOLDINGS, INC., PUBLIC)
SERVICE COMPANY OF NEW MEXICO AND PNM)
RESOURCES, INC.,)
)
JOINT APPLICANTS.)
_____)

JULY 29, 2021 REBUTTAL TESTIMONY

OF

FORREST SMALL

July 29, 2021

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JA Exhibit FS-1 (July 29, 2021) - Reliability Indices Reported to NMPRC

JA Exhibit FS-2 (July 29, 2021) - SAIFI and SAIDI for PNM, EPE, and SPS 2005 - 2020

JA Exhibit FS-3 (July 29, 2021) - Trend Lines for PNM and EPE

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OF FORREST SMALL
NMPRC CASE NO. 20-00222-UT**

I. INTRODUCTION AND PURPOSE

1
2 **Q. PLEASE STATE YOUR NAME, AFFILIATION, AND BUSINESS ADDRESS.**

3 **A.** My name is Forrest Small. I am Senior Vice President of Concentric Energy Advisors, Inc.
4 (“Concentric”), located at 293 Boston Post Road West, Suite 500, Marlborough,
5 Massachusetts 01752.

6 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN CASE NO. 20-00222-UT?**

7 **A.** Yes. On June 18, 2021, I filed Testimony in Support of the Second Amended Stipulation.
8 on behalf of Public Service Company of New Mexico (“PNM”), PNM Resources, Inc.
9 (“PNMR”), Avangrid, Inc. (“Avangrid”), Avangrid Networks, Inc. (“Networks”) and NM
10 Green Holdings, Inc. (collectively, the “Joint Applicants”) in the application regarding the
11 proposed acquisition of PNMR by Avangrid (such acquisition and associated corporate
12 organization steps as described in the application filed in this proceeding being the
13 “Proposed Transaction” or the “Transaction”).

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

15 **A.** The purpose of my testimony is to respond to the testimony of Mr. Evan D. Evans on behalf
16 of New Mexico Public Regulation Commission (“Commission”) Utility Division Staff
17 (“Staff”). My responses are to testimony regarding the reliability of Avangrid distribution
18 utilities, the reliability of PNM and other New Mexico utilities, and PNM reliability and
19 distribution system planning practices.

II. OVERVIEW AND KEY CONCLUSIONS

20
21 **Q. PLEASE PROVIDE A BRIEF OVERVIEW OF YOUR TESTIMONY IN**
22 **RESPONSE TO OPPOSITION TO THE SECOND AMENDED STIPULATION.**

23 **A.** I understand that since the Stipulation was filed, settlement discussions have continued
24 with Staff and other non-signatories and in some cases testimony in opposition to the
25 Stipulation is intended to reflect consensus positions on amendments to the Stipulation

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1 which non-signatory(ies) would find acceptable. In response, the Joint Applicants propose
2 to modify and enhance certain Stipulated Regulatory Commitments.

3
4 My testimony here addresses the reliability of Avangrid distribution utilities and how the
5 reliability metrics of these companies compare to utilities in the states in which they
6 operate. I also discuss the reliability metrics of PNM and how they compare to other
7 utilities in New Mexico. Finally, I address the potential negative consequences of excessive
8 focus on the worst performing distribution feeders in response to penalties.

9
10 **III. COMPARISON OF RELIABILITY OF AVANGRID DISTRIBUTION**
11 **UTILITIES TO OTHER UTILITIES**

12 **Q. PLEASE BRIEFLY SUMMARIZE THE TESTIMONY YOU RESPOND TO IN**
13 **THIS SECTION OF YOUR TESTIMONY.**

14 **A.** In this section of my testimony, I address the testimony in opposition to Stipulation of Mr.
15 Evans who objected to the comparison of reliability performance between utilities.

16 **Q. WHAT CONSIDERATIONS SHOULD ONE MAKE WHEN COMPARING THE**
17 **RELIABILITY PERFORMANCE OF UTILITIES?**

18 **A.** As stated in a recent paper by Concentric Energy Advisors¹:“when evaluating electric
19 reliability, it is crucial to recognize that power outages result from numerous factors,
20 including, but not limited to, weather, vehicle accidents, equipment failure, and wildlife on
21 energized equipment. Every part of the US has unique reliability challenges, and utilities
22 design and maintain electric systems accordingly.” Mr. Evans correctly points out in his
23 testimony that customer density, vegetation, distribution system infrastructure, and
24 operational technologies can influence the reliability performance of different utilities. In
25 addition to these factors, the number of customers a utility serves, and the geography over
26 which each utility operates can have a meaningful impact on how systems are designed
27 and operated.

¹ Avangrid Networks Reliability and Service Quality, Concentric Energy Advisors, June 2021.

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1 **Q. HOW DID YOU COMPARE THE RELIABILITY METRICS OF THE AVANGRID**
2 **DISTRIBUTION UTILITIES TO OTHER UTILITIES?**

3 **A.** Avangrid operates distribution utilities in Connecticut, Maine, and New York. I elected to
4 start by comparing each Avangrid distribution utility to other investor-owned utilities in
5 the same state. Comparing utilities in the same states meant that utilities would likely
6 experience similar weather conditions and tree cover. Consolidated Edison Company of
7 New York was not included in the analysis due to its densely urban service territory and
8 distribution system. Within each state I compared the SAIDI of each Avangrid utility with
9 the other utilities in the same state.

10 **Q. PLEASE SUMMARIZE HOW THE SAIDI OF THE AVANGRID UTILITIES**
11 **COMPARED WITH OTHER INVESTOR OWNED UTILITIES (IOUS) IN THE**
12 **SAME STATES.**

13 **A.** Over seven years from 2013 to 2019, the Avangrid utilities in Connecticut, Maine, and
14 New York have a lower average SAIDI (excluding Major Event Days) than other IOUs in
15 the same states. When Major Event Days are included the Avangrid utilities in New York
16 have a higher 7-year average SAIDI than the average of the other New York IOUs. The
17 Avangrid utilities in Connecticut and Maine have lower 7-year average SAIDI (including
18 Major Event Days) than the other IOUs in those states.

19 **Q. WHAT CONCLUSIONS DO YOU DRAW FROM THE FOREGOING**
20 **COMPARATIVE DATA?**

21 **A.** Avangrid's reliability metrics are similar to those of other comparable utilities in the
22 Northeastern United States. Severe weather events in heavily forested areas can have a
23 significant affect on the reliability performance of utilities in these areas.

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IV. RELIABILITY OF PNM AND NEW MEXICO ELECTRIC UTILITIES

Q. PLEASE BRIEFLY SUMMARIZE THE TESTIMONY YOU RESPOND TO IN THIS SECTION OF YOUR TESTIMONY.

A. In this section of my testimony, I address the testimony of Commission Staff witness Mr. Evans in opposition to the Second Amended Stipulation pertaining to the reliability metrics of PNM.

Q. DID YOU REVIEW RELIABILITY DATA FOR NEW MEXICO UTILITIES?

A. Yes. I reviewed reliability indices reported to the NMPRC by New Mexico IOUs from 2005 to 2020. I also reviewed reliability metrics reported to the United States Energy Information Administration (EIA) by IOUs and publicly owned utilities (POUs) from 2013 to 2019, the period for which EIA reliability data is available. Specifically, my review focused on System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI).

Q. DURING THE PERIOD FROM 2005 TO 2020 FOR WHICH PUBLICLY AVAILABLE RELIABILITY METRICS ARE AVAILABLE, HOW WOULD YOU SUMMARIZE PNM'S RELIABILITY PERFORMANCE?

A. PNM's overall SAIFI and SAIDI metrics are the most favorable in New Mexico from 2005 to 2020. PNM's average SAIFI and SAIDI are the lowest among the three IOUs for the period from 2005 to 2020, and also the lowest for the past five years (2016 to 2020).

Q. HOW DO PNM'S STANDARD RELIABILITY METRICS COMPARE TO THOSE OF IOUS IN NEW MEXICO?

A. PNM's SAIFI and SAIDI compare favorably to El Paso Electric Company (EPE) and Southwestern Public Service Company (SPS). As shown in Table 1, PNM's average SAIFI from 2005 through 2020 is 0.77, compared to 0.99 for EPE, and 0.90 for SPS. PNM's average SAIDI from 2005 through 2020 is 77.0, compared to 79.0 for EPE, and 78.2 for SPS. The reliability indices reported to the New Mexico Public Regulation Commission (NMPRC) are summarized in JA Exhibit FS-1 (July 29, 2021).

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Table 1. Average SAIFI and SAIDI for New Mexico IOUs

Period	PNM		EPE		SPS	
	Avg SAIFI	Avg SAIDI	Avg SAIFI	Avg SAIDI	Avg SAIFI	Avg SAIDI
2005 - 2020	0.77	77.0	0.99	79.0	0.90	78.2
2016 - 2020	0.88	94.3	1.07	101.0	1.01	104.9

1

2

Q. HOW DO PNM’S STANDARD RELIABILITY METRICS COMPARE TO THOSE OF POU’S IN NEW MEXICO?

3

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A. Comparing reliability metrics between larger utilities such as PNM and smaller utilities can be difficult due to potential differences in distribution system size, customer density, and utility operations. However, a high-level comparison shows that PNM’s SAIFI and SAIDI are lower than the average SAIFI and SAIDI of reporting POU’s.² To compare the metrics, I reviewed data from EIA Form 861. Form 861 reliability data is available from 2013 through 2019. From 2013 to 2019, PNM’s average SAIFI is 0.85 interruptions per year and the average SAIDI is 87 minutes per year. During that same period the average SAIFI for reporting POU’s is 1.75 interruptions per year and the average SAIDI is 174 minutes per year.

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Q. HOW DOES PNM’S RELIABILITY COMPARE TO OTHER NEW MEXICO UTILITIES OVER TIME?

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A. From 2005 through 2020 SAIFI and SAIDI have varied year-to-year for PNM, EPE, and SPS. Some years PNM’s SAIFI and SAIDI have been lower than EPE or SPS, and some years PNM’s metrics have been higher.

16

17

18

Q. HAVE THE RELIABILITY METRICS FOR PNM, EPE, AND SPS EXHIBITED AN INCREASING TREND FROM 2005 THROUGH 2020?

19

20

A. Yes. Both SAIFI and SAIDI have increased for PNM, EPE, and SPS from 2005 through 2020 (JA Exhibit FS-2 (July 29, 2021)).

21

² New Mexico POU’s that report reliability metrics as part of EIA-861 include Central New Mexico Electric Cooperative, Central Valley Electric Cooperative, Continental Divide Electric Cooperative, Farmers Electric Cooperative, City of Farmington, Jemez Mountains Electric Cooperative, Kit Carson Electric Cooperative, Los Alamos County, Lea County Electric Cooperative, Mora-San Miguel Electric Cooperative, Navajo Tribal Utility Authority, Northern Rio Arriba Electric Cooperative, and Sierra Electric Cooperative.

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1 **Q. HOW DO THE TREND LINES COMPARE AMONG THE NEW MEXICO IOUS?**

2 **A.** As shown in JA Exhibit FS-3 (July 29, 2021), the trend lines for PNM and EPE appear
3 very similar. The trend lines for PNM and EPE indicate an increase in SAIDI of
4 approximately three minutes per year from 2005 through 2020. The trend line for SPS
5 indicates an increase in SAIDI of approximately six minutes per year from 2005 through
6 2020.

7 **Q. HOW DOES THE YEAR-TO-YEAR VARIATION OF PNM'S RELIABILITY**
8 **COMPARE TO OTHER NEW MEXICO UTILITIES OVER TIME?**

9 **A.** As I stated previously, SAIFI and SAIDI have increased and decreased from year-to-year
10 over the period from 2005 through 2020. PNM's average year-to-year change in SAIFI is
11 approximately 12%. By comparison, EPE's average year-to-year change in SAIFI is
12 approximately 26%, and SPS's average year-to-year change in SAIFI is approximately
13 24%. PNM's average year-to-year change in SAIDI is approximately 18%. By comparison,
14 EPE's average year-to-year change in SAIDI is approximately 39%, and SPS's average
15 year-to-year changing in SAIDI is approximately 22%. Overall, the year-to-year variation
16 in PNM's SAIFI and SAIDI is lower than for the other IOUs.

17 **Q. WHAT COULD CAUSE YEAR-TO-YEAR VARIATION IN RELIABILITY**
18 **METRICS?**

19 **A.** Outages caused by storms are usually a significant factor. Severe weather can cause
20 extensive damage to electrical infrastructure that can require significant time and resources
21 to repair. It is not uncommon for a major storm to have a material impact on a utility's
22 reliability performance from year-to-year. Damage to critical infrastructure such as a
23 transmission line or substation can also result in a widespread outage that affects thousands
24 of customers for several hours or longer. Such an incident could have a noticeable effect
25 on reliability metrics.

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1 **Q. EXPLAIN WHY LOWER YEAR-TO-YEAR VARIATION IS DESIRABLE?**

2 **A.** Lower variability can indicate that a utility has experienced fewer events that are
3 particularly severe or widespread. Lower variability might also be a sign that a utility is
4 employing system design and maintenance practices that reduce the likelihood of outages
5 from vegetation, animal contact, or vehicle accidents. Lower variability is desirable
6 because it can allow a utility to focus on programmatic system planning and reduce reactive
7 work and investments.

8 **V. DISTRIBUTION SYSTEM PLANNING**

9 **Q. HOW WOULD YOU CHARACTERIZE THE FOCUS OF THE RELIABILITY**
10 **IMPROVEMENT APPROACH RECOMMENDED BY MR. EVANS FOR PNM?**

11 **A.** Mr. Evans' proposed approach appears focused on worst performing feeders. In addition
12 to penalties for system reliability below target, he recommends assessing penalties on
13 feeders that perform in the bottom 10% for two or more consecutive years. His approach
14 could encourage simply identifying the lower performers and improve them within two
15 years to increase reliability and avoid paying penalties.

16 **Q. DOES THIS APPROACH BUILD LONG-TERM DISTRIBUTION SYSTEM**
17 **VALUE FOR PNM'S CUSTOMERS?**

18 **A.** Not by itself. Focusing on bottom performing feeders to avoid penalties could have
19 significant consequences for the long-term value of the distribution system. First, by
20 focusing on avoiding penalties, PNM may be forced to redirect capital and maintenance
21 away from existing distribution programs that have been carefully designed to provide
22 long-term value. Second, some distribution upgrades can take more than one year to
23 engineer and construct. It may be impossible to make necessary modifications in time to
24 avoid a penalty, without resorting to suboptimal planning and solutions. Third, a continued
25 focus on improving the low performers may eventually lead to higher cost per reliability
26 improvement over time, decreasing overall value for customers. Under Mr. Evans'
27 approach, no matter how high PNM's system reliability becomes, the Company would still
28 pay penalties for its low performers (the bottom 10%). This "ratchet effect" could

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1 ultimately lead to overinvestment and higher than necessary distribution rates for
2 consumers.

3 **Q. HOW MIGHT IMPROVING LOW PERFORMING FEEDERS FIT WITHIN**
4 **PNM'S RELIABILITY PROGRAM?**

5 **A.** Many utilities track worst-performing circuits (WPCs) as part of their annual reliability
6 performance reports. WPCs may also overlap with other utility planning programs or
7 initiatives, such as addressing aging infrastructure. Utilities may also incorporate customer
8 complaints, adverse customer impacts, and the sensitivity of the customers served by
9 feeders when identifying WPCs. As PNM considers the outcomes of a reliability
10 performance program, it will be essential to have the ability to manage limited budgets,
11 focus on overall quality of service for customers, and drive programmatic improvements
12 for the reliability of the distribution system.

13

14

VI. CONCLUSIONS

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

16 **A.** Yes, it does.

17

18

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Reliability Indices Reported to the New Mexico Public Regulation Commission

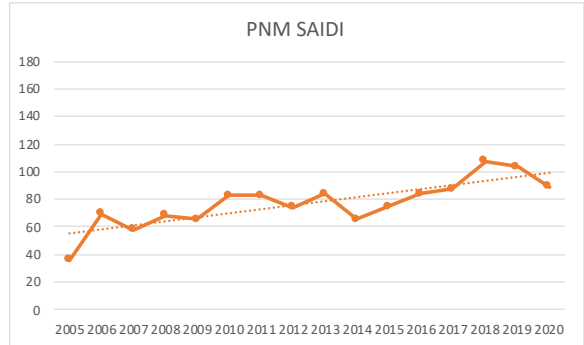
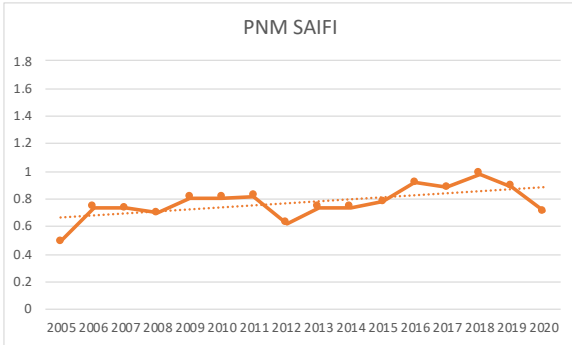
Year	PNM		EPE		SPS	
	SAIFI	SAIDI	SAIFI	SAIDI	SAIFI	SAIDI
2005	0.49	35.9	0.96	48.4	0.52	31.4
2006	0.74	69.3	0.63	41.3	0.58	33.2
2007	0.73	58.1	0.71	56.9	0.63	38.1
2008	0.70	68.2	0.92	103.6	0.81	50.0
2009	0.81	65.4	1.21	97.3	0.59	44.4
2010	0.81	82.6	0.90	63.2	1.06	77.7
2011	0.82	82.7	1.12	67.7	0.99	77.2
2012	0.62	74.0	0.91	76.7	0.93	73.8
2013	0.74	83.9	0.98	66.7	1.20	93.9
2014	0.74	65.4	0.90	53.0	0.80	74.6
2015	0.78	74.6	1.34	84.3	1.26	132.9
2016	0.92	84.2	1.08	69.9	1.17	118.3
2017	0.88	87.4	1.61	157.2	0.94	90.3
2018	0.98	107.3	0.99	84.5	1.03	106.2
2019	0.89	103.4	0.74	66.7	0.88	103.7
2020	0.71	89.2	0.91	126.5	1.03	106.2

SAIFI: System Average Interruption Frequency Index, average customer interruptions per year

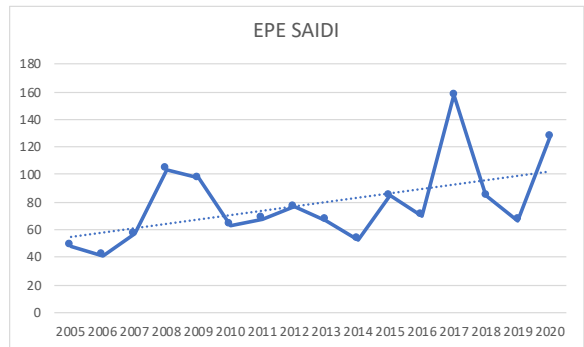
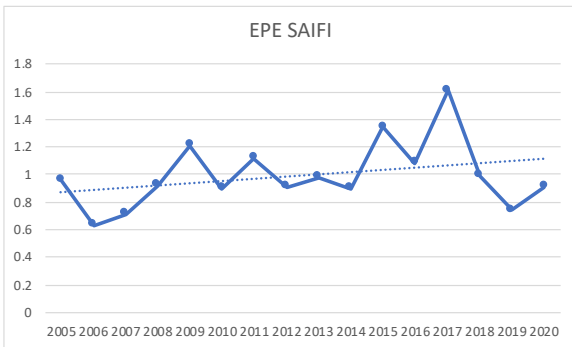
SAIDI: System Average Interruption Duration Index, average customer interruption minutes per year

SAIFI and SAIDI for New Mexico IOUs

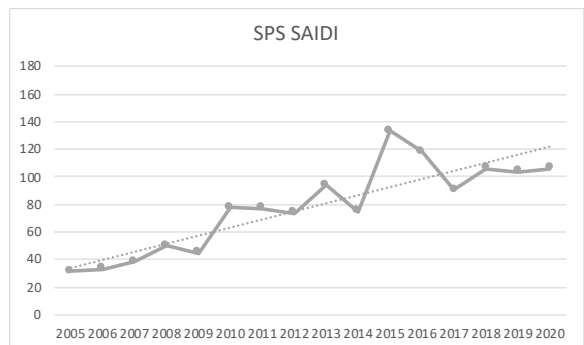
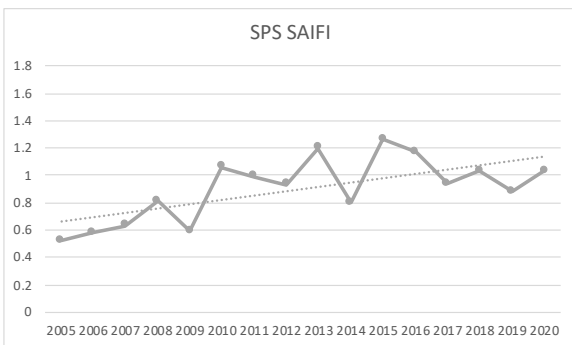
Public Service Company of New Mexico



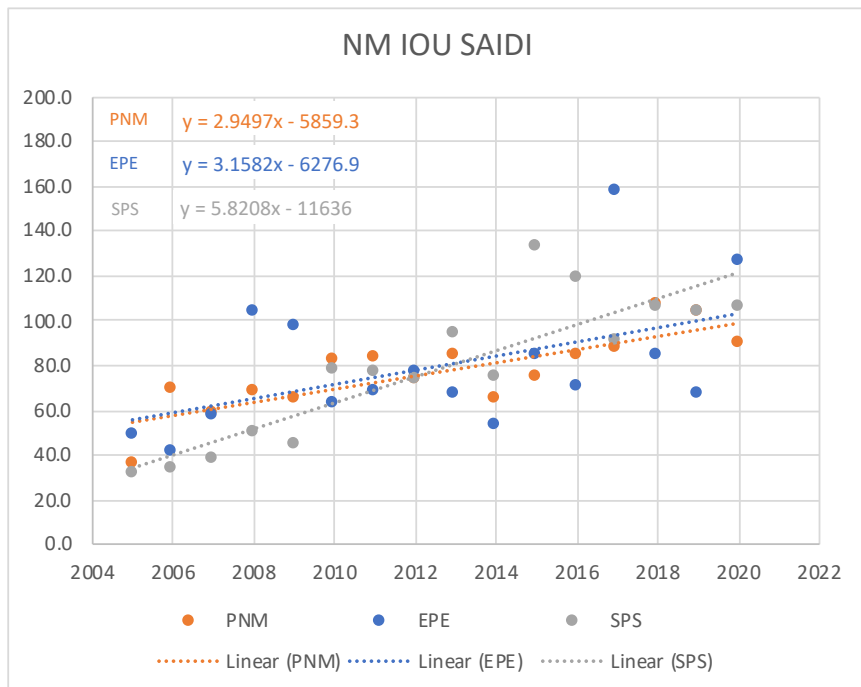
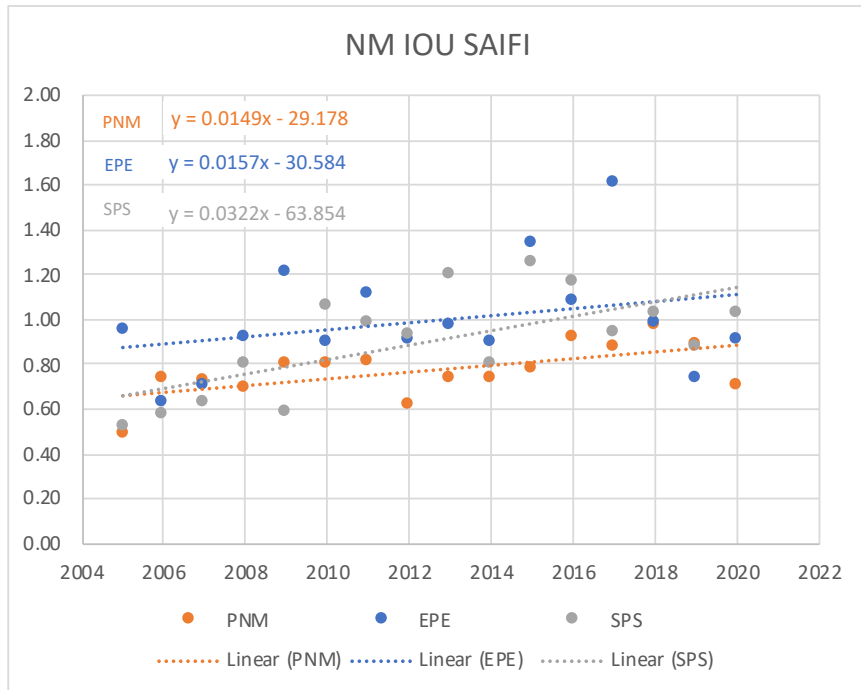
El Paso Electric Company



Southwestern Public Service Company



SAIFI and SAIDI trends



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SELF AFFIRMATION

FORREST SMALL, Senior Vice President of Concentric Energy Advisors, Inc., upon penalty of perjury under the laws of the State of New Mexico, affirm and state: I have read the foregoing **July 29, 2021 Rebuttal Testimony of Forrest Small** and it is true and correct based on my personal knowledge and belief.

DATED this 29th day of July, 2021.

/s/ Forrest Small
FORREST SMALL