BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR PRIOR APPROVAL OF THE ADVANCED METERING INFRASTRUCTURE PROJECT, DETERMINATION OF RATEMAKING PRINCIPLES AND TREATMENT, AND ISSUANCE OF RELATED ACCOUNTING ORDERS	)	**Case No. 15-00312-UT**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant.	)	

CITIZENS FOR FAIR RATES AND THE ENVIRONMENT'S

BRIEF-IN-CHIEF

December 5, 2017

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1. Introduction

COMES NOW Citizens for Fair Rates and the Environment ("CFRE"), by and through its Director, Thomas Manning, and states the following for CFRE's Brief-in-Chief:

CFRE is an association of residential ratepayers of Public Service Company of New Mexico's ("PNM"). Although CFRE's primary concern is a speedy transition away from dirty and dangerous fossil fuels, ratepayer's economic interests, including an *equitable* transition to renewable resources is another focus of CFRE's membership. Safety factors have now joined environmental and economic concerns as core issues with regard to PNM's Advanced Metering Infrastructure ("AMI") proposal. Our focus in this case on various safety issues and concerns was unexpected. Our primary concern which led us to intervene was the need for economic fairness to ratepayers; CFRE knows that there is abundant evidence that the economic assumptions underlying PNM's cost-benefit analysis are not reliable. Contrary to PNM's assertion of a net benefit to ratepayers, we argue that implementation of AMI would increase the metering costs that are covered by all of PNM's ratepayers. In addition, based upon the speculative nature of PNM's assumptions we contend that the rate increase that PNM has requested for AMI implementation would never decrease, i.e., we contend that PNM's projected future savings would never materialize for ratepayers. CFRE contends that if its implemented, AMI will lead to more rate increases.

In case after case, CFRE has seen PNM put the economic interests of shareholders above the interests of ratepayers. This case is no different because PNM understated and failed to analyze the economic and environmental risks to ratepayers; PNM failed to analyze alternatives, and PNM failed to present forthright witnesses and testimonies. CFRE asserts that PNM did not balance

shareholder and ratepayers' interests, and, unfortunately, similar to PNM's other recent resource acquisitions, this proposal is yet another veiled attempt to pursue shareholder interests at ratepayers' expense.

PNM's AMI proposal should be considered in the context of all of PNM's other recent resource acquisition cases which include the following: an overly restrictive ("rigged") RFP process in 17-00129-UT; two requests to build gas plants (which PNM withdrew after intervenors removed the cloak and PNM's insufficient justification for these additional capital expenditures was laid bare) as in 15-00205-UT and 16-00105-UT; failure to look at alternatives to the Four Corners Power Plant contemporaneously even when El Paso Electric demonstrated that it was more cost-effective to pursue other resources as in 16-00276-UT; failure to consider alternatives to Palo Verde Nuclear Generating Station acquisition and lease extensions as in 15-00261-UT; and failure to look at real world contemporaneous prices for renewable resource alternatives in 13-00390-UT (including PNM's attempt to hide the true cost of fossil fuel vs. renewables alternatives behind the Strategist "black box").

All of the above are examples of PNM attempting to justify overly expensive or unnecessary resource acquisitions in order to gouge ratepayers. PNM repeatedly pursues unnecessarily expensive resource acquisitions in order to increase PNM's rate base to the benefit of shareholders and to the detriment of ratepayers (i.e., rate base growth leads to earnings growth which leads to dividends growth).[1] This is PNM's 1.7-billion-dollar[2] modus operandi. While we recognize that the AMI case must be decided based upon the case record, CFRE respectfully requests that the Commission not lose sight of the above examples and that the Commission uses

[1] (CFRE Exhibit 34, p. 6; CFRE Exhibit 9, p. 5; CFRE Exhibit 10, p. 5.)
[2] (CFRE Exhibit 9, p. 7 "2016-2019 Total Capital Plan: $1.7B"; CFRE Exhibit 10, p. 6.)

warranted skepticism of PNM's claimed motivation and justification while reviewing the instant case.

CFRE does not have the resources to pursue many aspects of PNM's proposal in detail. However, we hope that we made a significant contribution toward making the case record more complete than it would have been without our intervention in this proceeding. We hope that our input will aid the Hearing Examiner and the Commission in their respective decisions and in considering the many reasons why PNM's AMI proposal should not be implemented.

2. Issues Raised in Briefing Order No. 2

In response to the issues reiterated in the *Briefing Order No. 2*, CFRE offers the following observations:

a. Failure of PNM to Seek the Requisite Certificate of Convenience and Necessity

CFRE contends that PNM does not have legal authority to pursue a new system of metering outside of a CCN case. We made this argument in our *Motion to Dismiss*, and in our *Brief in Support of Motion to Dismiss*, 2/9/17. CFRE maintains that a Certificate of Convenience and Necessity ("CCN") is legally required for a new utility system such as PNM's proposed AMI system.

In the *Order Addressing CFRE Motions to Suspend and Dismiss Proceedings*, February 23, 2017, the Hearing Examiner stated that:

> . . . the substantive arguments raised in CFRE's Motion regarding the need for a CCN and the applicability of the New Mexico Engineering and Surveying Practice Act will be addressed in the recommended decision the Hearing Examiner issues in this case.[3]

[3] (*Order Addressing CFRE Motions to Suspend and Dismiss Proceedings*, 2/23/17, p. 3.)

Therefore, CFRE does not believe it necessary for CFRE to rewrite the arguments that we raised in the motion and supporting brief that the Hearing Examiner has already indicated that he will address. Instead, CFRE incorporates the *Motion to Dismiss* and the *Brief in Support of Motion to Dismiss* (filed February 9, 2017) by reference. On the issue of the need for a CCN raised therein CFRE will offer a few additional points as follows:

i. In *Public Service Company of New Mexico's Consolidated Response in Opposition to Intervenor Citizens for Fair Rates and the Environment's Motion to Dismiss and Motion to Suspend Proceedings and Brief in Support Thereof*, February 22, 2017, PNM makes the following argument:

> If the Commission were to adopt CFRE's argument, it would mean that a regulated utility's periodic updating or replacement of electric meters, cables, poles, transformers, and other existing distribution infrastructure would also require CCNs. . .[4]

This is a ridiculous assertion by PNM. No one would argue that periodic updating of basic components of an already existing distribution infrastructure would require CCNs. However, PNM's proposal in this case is clearly to remove an entire existing system of metering as PNM itself stated: **"PNM will retire all of its existing electricity consumption and demand meters** and ***replace them*** with AMI meters and equipment that will allow PNM to remotely read customers' meters."[5] (Emphasis added.) PNM's proposal is for an entire new metering system with different types of components, some never before utilized by PNM.[6]

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[4] *Public Service Company of New Mexico's Consolidated Response in Opposition to Intervenor Citizens for Fair Rates and the Environment's Motion to Dismiss and Motion to Suspend Proceedings and Brief in support Thereof*, February 22, 2017, p. 10.

[5] Application, p. 1, Summary of Approvals Sought, first bullet point.

[6] Please also see CFRE Exhibit 2 (PNM Exhibit AG 1-9B), *Attachment 5 – Technical Questionnaire*, for examples of the multitude of questions that PNM posed about various "System Requirements." (This exhibit was also previously CFRE Exhibit Brief-2 in CFRE's *Brief in Support of Motion to Dismiss.*)

ii. PNM's AMI proposal is outside the objective of the rule that PNM cited (Rule 440, i.e., 17.5.440 NMAC), in its response to CFRE's *Motion to Dismiss* and supporting brief. First, CFRE notes that we searched PNM's application and supporting Direct Testimonies and could *not* find *any* reference to this rule nor any claim that PNM's AMI filing was being made under the authority of this rule. PNM did not originally cite this as an authority under which it was filing its application because this rule does not apply. Instead, PNM later attempted to rely upon rule 440 because CFRE had pointed out that PNM did not apply for the requisite CCN.

Second, 17.5.440.9A.(4) is "Report[ing] requirements for extensions, improvements, and additions."[7] **PNM is not extending, improving or making an addition to its metering system.** PNM itself has stated, it is "retire[ing] **all** of its existing electricity consumption and demand meters and **replace[ing]** them with AMI meters and equipment," i.e., **a new metering system**, an AMI "system." (Emphasis added.) PNM did not originally cite 17.5.440.9A.(4) as an authority for its application because PNM's AMI application is outside of the objective of this reporting requirement rule. Again, PNM is not "improving" its metering system, it is removing it and replacing it.

iii. In response to the Hearing Examiner's question, "[w]hy don't you think a CCN is necessary?"[8] Mr. Ortiz attempted to claim that PNM's proposal consists of an "extension" of

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[7] **17.5.440.9 ELECTRIC UTILITIES:**
A. Report requirements for extensions, improvements, and additions: Each public utility shall, prior to making any of the following described extensions, system improvements, or additions as set forth in (1) through (5) below, file a written report with the commission setting forth the character of the undertaking, the purpose sought thereby to be accomplished, the means by which that purpose is intended to be realized, the estimated costs involved in the employment of those means, the data upon which the engineering and economic feasibility of the undertaking is based, and, if (1) below is applicable, the name or names of the utilities toward which the proposed extension is to be made.
. . .
(4) Substantial system characteristic improvements involving a change in operating voltage of electric lines. Substantial system characteristic improvements involving reconductoring, rephasing (addition or of phases) of electric lines resulting in a length of two miles or more. System improvements of an overall or system-wide nature shall be submitted to the commission as an overall plan.

[8] (TOP 2/27/17, p. 124, l. 9.)

PNM's service.[9] However, Ms. Teague, in her testimony, confirmed that PNM's new metering system could not be considered an extension of, or "extending" an existing metering system because ***it is removing the existing system and replacing it with another, a new, metering system***.[10]

iv. The authorities under which PNM claimed to be filing the application are merely authorities for revision of its rates, they are not authorities appropriate for the review of a significant new resource acquisition or investment. The following is a quote from PNM's cover letter filed with its application:

> Dear Ms. Sandoval,
>
> In accordance with the requirements set forth in New Mexico Public Regulation Commission ("Commission") 17.9.530.9 NMAC and 17.1.2.10 NMAC, Public Service Company of New Mexico ("PNM") hereby submits its Application requesting approval of PNM's proposed Advanced Metering Infrastructure Project ("the AMI Project"). . .[11]

v. The following exchange is revealing in PNM's acknowledgement that a CCN standard is the appropriate standard to apply in the instant case:

> Q [Hearing Examiner] . . . What standard is the Commission supposed to be using to evaluate your application here?
>
> A [Mr. Ortiz] I would say that the appropriate standard is: Are there net benefits to customers? . . .
>
> Q The net benefit standard that you mentioned -- that's a standard that's used for the evaluation of a CCN, is it not?
>
> A Yes, generally, I think that's correct. . . [12]

[9] (TOP 2/27/17, p. 124, l. 10 et seq.)
[10] (TOP 2/28/17, p. 95, l. 16-21.)
[11] (Application, Cover Letter, ¶1.)
[12] (TOP 2/27/17, p. 123, l. 11-24.)

b. Failure of PNM to Justify Meter Plant Abandonment

i. CFRE contends that the considerations of meter plant abandonment apply to the proposed abandonment of meters currently in use, and if and when PNM decides to apply for a CCN for a new system of metering, ***it must further apply for abandonment*** of its meter plant and ***it must meet the standard for abandonment*** as stated below:

> Section 62-9-5 of the Public Utility Act states that the Commission may approve the abandonment of a utility facility if the present and future public convenience and necessity do not otherwise require the continuation of the use of the facility. NMSA 1978, §62-9-5. The Commission has held that the public convenience and necessity requires the showing of a net benefit, and it has applied the four decertification factors set out in *Commuters Committee* as a guide to determine whether a proposed abandonment produces a net benefit: (1) the extent of the carrier's loss on the particular branch or portion of the service, and the relation of that loss to the carrier's operation as a whole; (2) the use of the service by the public and prospects for future use; (3) ***a balancing of the carrier's loss with the inconvenience and hardship to the public upon discontinuance of service;*** and (4) the availability and adequacy of substitute service.
> *Commuters' Committee v. Pennsylvania Public Utility Commission,* 170 Pa. Superior Ct. 596, 604-605, 88 A.2d 420, 424 (1952).[13]

CFRE has not seen adequate analysis of the above considerations in the instant case. Of particular concern to CFRE are the following considerations:

ii. As per consideration (2) of *Commuters' Committee,* PNM's meter plant is currently being used by PNM's customers and it is providing perfectly good service. As Mr. Ortiz stated in his direct testimony, ". . . **this project is not necessary** for the provision of adequate service nor is it required by any Commission rule or other regulatory mandate."[14] (Emphasis added). PNM further emphasized that the project is ". . . a **discretionary** expenditure of [] **magnitude**. . ."[15] (Emphasis added).

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[13] (*Certification of Stipulation* NMPRC Case No. 13-00390-UT p. 15.)
[14] (Ortiz Direct, 2/26/16, p. 8, lines 6-14.)
[15] (Id.)

iii. As per consideration (3) of *Commuters' Committee* "a balancing of the carrier's loss with the inconvenience and hardship to the public upon discontinuance of service"; as applied in the instant case, this could be more accurately restated as follows: a balancing of the carrier's *financial gain* with the inconvenience and hardship to the public upon discontinuation of service. These inconveniences would include approximately 125 people losing their employment,[16] and PNM's infliction of monthly "opt-out" fees upon people who may have health, safety, privacy, or other concerns and, therefore, those customers do not want AMI meters.

CFRE has not seen due consideration by PNM of the hardship that PNM wishes to impose upon customers who would prefer not to be served by AMI meters. In fact, PNM objected many times while CFRE focused upon the issue of what PNM's proposed opt-out fee would mean to low-income customers.[17] Mr. Ortiz looked at the issue of opt-out fees from essentially the opposite viewpoint as it is posed in (3) of *Commuters Committee*. At one point in cross-examination, instead of considering the hardship upon customers, especially low-income customers, who would not be able to treat the imposition of this added expense as a "choice," Mr. Ortiz considered it "like any other purchase decision."

> Q [Mr. Manning] Mr. Ortiz, can you see that this might be a hard choice for a low-income family to make?
>
> A I think that just like any other purchase decision, Mr. Manning, a person, when they are considering what they're going to buy, how they're going to spend their money, they will have to evaluate what the cost is relative to the value or utility they're getting from it. And so that's -- that's absolutely a personal choice. . . . . .[18]
>
> It's -- it's not very different from the purchase decisions that people make virtually every day.[19]

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16 (Teague, Direct, p. 30, l. 16-18.)
17 (TOP 3/30/17, p. 59, l. 6-20; p. 60, l. 6-8, l. 13, 19; p. 61, l. 20-p. 62, l. 8; p. 64, l. 13-14; p. 65 l. 17-19; p.65 l. 22-23; p. 68, l. 21-p. 69, l. 3; p. 69, l. 5-10.)
18 (TOP 3/30/17 p. 67, l. 22-p. 68, l. 6.)
19 (TOP 3/30/17 p. 68, l. 12-14.)

CFRE believes that Mr. Ortiz's minimization of the hardship upon PNM's low-income customers by the imposition of an opt-out fee is in conflict with PNM evaluating, in a forthright manner, consideration number (3) of the decertification factors set out in *Commuters Committee.* PNM "turns the table" and instead, tries to make us consider that it is PNM, or other ratepayers, who would be imposed upon. This is an opposite framing of the issue posed in (3). Mr. Ortiz states that it would be the opt-out customers who would be imposing additional costs, not the other way around:

> Q [By Mr. Manning] Would I notice a difference in my service? I would be getting the same electricity, just at a greater price.
>
> A But you would be imposing additional costs on the system, which is also an important consideration.[20]

Saying that low-income customers, who are struggling to make ends meet,[21] have a choice in paying a high opt-out fee is insensitive and untrue. The decision of whether or not one should pay an opt-out fee to not have a meter that they do not want rather than feeding the kids dinner is not "just like any other purchase decision."

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[20] (TOP 3/30/17, p. 64, l. 3-8.)

[21] Please note that some customers may have multiple notices or disconnects, so the table below may not correlate completely with the total number of customers or families disconnected in a given year. This also does not reflect the many low-income customers or families that succeed in keeping current on their electricity expenses even though it is a struggle.

Year	Number of Disconnect Notices	Number of Actual Disconnects
2014	360,223	22,485
2015	373,923	17,611
2016	375,214	17,466

(PRC Case No. 16-00276-UT, NEE Exhibit 8.)

(Please note that in Case No. 10-00018-UT, the Hearing Examiner relied upon testimony from Case No. 12-00131-UT. *Post Remand Final Order*, 10-00018-UT, 12/11/12, Exhibit 1, or *Recommended Decision on Remand*, 11/7/12, p. 51, footnote 117, citing Gerrard Ortiz referring to "real energy," renewables vs. RECs. Also cited testimony from 12-00131-UT on p. 32, ftnt 67; p. 33, ftnt 68, 69; p. 34, ftnt 73; et al.)

iv. Apparently, PNM has also not considered, as per decertification factor (4), that for some of its customers the AMI service that PNM is proposing is not an "adequa[te] substitute service," and therefore, customers should not be subjected to huge rate increases, sometimes 100% or more,[22] simply for being concerned about their own health, safety, privacy or whatever other valid concerns that they may have.[23]

CFRE contends that PNM must address the four decertification factors set out in *Commuters Committee* prior to Commission consideration of the abandonment of PNM's meter plant.

c. What Constitutes a "Factual Showing" of Net Benefit?

As far as the question posed in paragraph 3 of *Briefing Order No. 2*, "does PNM have the right to implement the AMI Project upon a factual showing that the net present value of the savings resulting from the project exceeds the project's costs over the 20-year life of the AMI investment?" No, there are laws and regulations in place, which are further addressed above and below, aimed at protecting ratepayers and the public; they include considerations, other than PNM's oft repeated "talking points" and its speculative projection of net benefit that must be met. Furthermore, in considering this question, one must consider what constitutes a "factual showing that the net present value of the savings resulting from the project exceeds the project's costs over the 20-year

[22] (CFRE Exhibit 22 for an example of the opt-out fee itself being more than the monthly power bill for a family of three; and, TOP 3/30/17 p. 61, l. 4-15; for full discussion see p. 58, l. 10-p. 69, l. 10.)

[23] Note, PNM has now proposed a slightly reduced opt-out fee of $42.72/month. (Teague supplemental, 9/5/17, p. 16, l. 13-19. Therefore, the 1-year total has reduced to $512.64 plus tax or about $554./year. As Mr. Alvedrez said while objecting to the focus on the proposed cost to op-out, "[a]nd, you know, the Commission knows what $500 means." (TOP 3/30/17, p. 69, l. 2-3.) (It means roughly the cost of one major appliance per year.) A purchase of a reasonably good refrigerator per year is still possible, but more on the margin for what PNM is currently requesting. Nonetheless, in 10 years a low-income household could replace their refrigerator, clothes washing machine, dryer, dishwasher, chest freezer, barbeque grill, TV, laptop, and possibly more, instead of spending their money on the amended opt-out charges that PNM is now requesting. This can hardly be considered a reasonable "choice" for a low-income family.

life of the AMI investment." CFRE argues that PNM has not made a "factual showing." This is spotlighted by PNM's clear aversion to making any guarantee that the project would produce a net savings for ratepayers; a *guarantee* would be the *only* way to *ensure* that net savings to customers would be a "fact."

However, contrary to the projected savings being a fact, PNM ***is not* even *willing to guarantee that the project will not end up costing customers more*** than if PNM simply keeps the current metering system.[24] In CFRE's view, the single most risky cost assumption that PNM makes is the 20-year meter-life assumption. This assumption is not even addressed in the testimonies of Andrea Crane, testimonies that, even without considering the speculative meter-life assumption, have projected that the proposal would end up costing ratepayers more than if the project is not implemented.[25] PNM has not analyzed scenarios where the meters don't meet the 20-year meter-life projection.[26] **PNM will not even guarantee that this one assumption will be realized**.[27]

On this topic, Mr. Manning posed a question to Mr. Ortiz: "Why is PNM not willing to guarantee that any savings will occur, or that it will not cost customers more if this project is implemented?"[28] In the midst of Mr. Ortiz's redundant talking points he stated ". . . and so you get into a hindsight review and you end up with arguing about things that frankly aren't productive,

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[24] **From the very beginning** PNM has proposed a mechanism for cost-recovery if the project costs are 10%, **or more**, over projected costs. (Application, Executive Summary, p. 1, second bullet point under "Summary of Approvals Sought.)

[25] Addressing only three of PNM's speculative assumptions, in Ms. Crane's Response Testimony, 9/29/17, she estimated that PNM's projected savings to customers would actually lead to a loss of $12.141 million NPV. (Crane, Response, p. 10, l. 2-4.) PNM "enhanced" the deal in its Rebuttal Testimonies, 10/13/17. If the changes reflected in those testimonies decreasing the costs to customers by 7.5 million (Ortiz, Rebuttal, p. 2, l. 19-22, $16.1-$8.6=$7.5 million) are subtracted from Crane's Response Testimony figures, Crane's current projected cost to customers could be extrapolated to be approximately $4.6 million NPV. Again, this projected added cost to ratepayers does not include consideration of many of PNM's other speculative assumptions, such as the meter-life assumption.

[26] (TOP 10/26/17, p. 97, l. 13-22.)

[27] (TOP 10/25/17, p. 79, l. 8-10.)

[28] (TOP 10/25/17, p. 78, l. 5-7.)

but they give parties an opportunity for a second bite at the apple. . . "[29] CFRE doesn't think that witness Ortiz could have described PNM's approach better. At the onset of its proposal, PNM is the party that has proposed a feast of apples (the "tablecloth" is the AMI proposal). PNM has requested a predetermination of prudence (the plate on the cloth) and treatment akin to rule 17.3.580 NMAC[30] (the fork and knife). PNM proposed this even though it hadn't yet done the work of analyzing alternatives and objectively considering risks (washing the apples, cutting out the worms, and "coming clean").

d. PNM's Requested Ratemaking Treatment of Cost-Overruns is Not Just or Reasonable

CFRE contends that the issues in paragraph 2 b. of *Briefing Order No. 2* are generally moot questions at this point in time. We firmly assert that PNM has still not fulfilled its rudimentary obligations including acquiring the requisite P.E. certification, and it has not applied for a CCN (nor has it performed the due diligence that should be detailed in an application and supporting testimonies for a major resource acquisition or for a CCN).

However, CFRE notes that the ratemaking treatment issues inquired about in paragraph 2 b., do not include PNM's requested ratemaking treatment of potential cost-overruns that *could* lead to a net loss to ratepayers from project implementation.[31] CFRE views PNM's cost over-run request to be quite troublesome, especially considering the many speculative assumptions in the

[29] (TOP 10/25/17, p. 78, l. 19-23.)
[30] See below for the quote from Application, Executive Summary, p. 1, second bullet point under "Summary of Approvals Sought."
[31] (See below discussion on PNM's request for a prudency determination. Also see discussion 4. B. ii., Shareholders Would be the Party to Reap the Financial Benefits of AMI Deployment.)

cost-benefit analysis.[32] PNM's refusal to guarantee that any savings will occur,[33] coupled with PNM's upfront request for cost over-runs to be treated as if PNM had actually engaged in a process with the comprehensiveness of a CCN proceeding,[34] is surreal.[35] PNM's request as written in its Summary of Approvals Sought is as follows:

> **Summary of Approvals Sought**
> . . .
> Determination that the cost of AMI, not to exceed $87.2 million,[36] is reasonable and prudent, and authorization to recover such cost in future ratemaking proceedings, with any cost overruns recovered in rates only after a Commission determination that such excess costs were prudently incurred, using 17.3.580 NMAC to guide the process; [37]
> . . .

CFRE notes that the above bullet point is inconsistent. PNM states that cost over-runs would be recovered in rates ". . . only after a Commission determination that such excess costs were prudently incurred . . ." This phrasing does not offer much ratepayer protection if PNM receives the prior determination that the "cost of AMI . . . is reasonable and prudent," especially if we use the CCN cost over-run rule as a guide.[38] If the original AMI system purchase is deemed

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[32] Between PNM's initial cost-benefit analysis and the filing of its supplemental testimonies, 9/5/17, PNM's speculative net-benefit projections changed substantially. The projected net benefit to customers decreased from $20.9 million (Ortiz, Rebuttal, p. 4, l. 7) to $8.6 million (Ortiz, Rebuttal, p. 3, l. 22.). ***Staff*** pointed out that they had accurately ***called PNM's projections "speculative and intrinsically unreliable."*** (Gunter, Response, 9/29/17.) CFRE agrees with Staff that this $12.3 million dollar decrease in projected benefit to ratepayers, which reflects the change in projected project costs, demonstrates the subjectivity of numerous assumptions in the cost-benefit analysis as well as the lack of reliability of PNM's assertion of customer financial benefit.

[33] "If there has -- if there is one fact that has never been in dispute in this case, it is that PNM is not willing to guarantee the savings it estimates the AMI project will yield." (TOP 10/25/17, p. 64, l. 18-21.)

[34] Application, p. 1, Summary of Approvals Sought, second bullet point.

[35] The PUA requires that any change in rates "is consistent with the purposes of the Public Utility Act, including serving the goal of providing reasonable and proper service at fair, just and reasonable rates to all customer classes. . ." (62-8-7.E.(1). NMSA, et al.)

[36] Note, the $87.2 million figure is no longer what PNM is claiming, "[t]he revised AMI Project capital costs are $95.1 million" (Teague Supplemental, 10/5/17, p. 8, l. 6.)

[37] (Application, Executive Summary, p. 1)

[38] (Under the cost overrun rule, the requirement for justification for cost overruns is weakend by a predetermination of prudency because the predetermination of prudency becomes the justification.)

"prudent," then PNM will use that prudency determination as its primary argument that "unforeseeable" cost overruns, such as electronic computing meters not lasting 20 years outside in the weather,[39] or communication capability of the meters not lasting (as has happened with other AMI meters),[40] or if the electronic LCD screen ceases to display (as has happened with other AMI meters),[41] or voltage errors,[42] or memory errors,[43] or if need for actual **real-time** information becomes mandated as would be useful for real-time in-premise demand response, or if in premises gateway becomes recognized as beneficial for managing energy usage and demand management,[44] or, . . . the list on.

PNM is prematurely requesting a determination of prudency without requesting a CCN for its AMI proposal.[45] PNM is requesting a determination of prudency without engaging in a due

[39] "Q Do you have an opinion about whether solid-state meters are more prone to storm damage than analog meters? A [O'Dell] I would say, yes, they are." However, Mr. O'Dell had no opinion about storm damage potential to routers on telephone poles. (TOP 3/1/17, p. 163, l. 4-l. 23.)

[40] This information was "knowable" to PNM, for example some discovery responses from an APS rate case had been filed in this case (see *Citizens for Fair Rates and the Environment's Response to Public Service Company of New Mexico's Motion for Procedural Schedule*, 5/25/17.) A prudent utility would seek out this sort of information in researching the risks of the proposal. PNM could have done its due diligence and looked into the issues upon which CFRE presented evidence in said CFRE response. However, PNM did not try to asses this "knowable" information about actual utility company experiences with AMI technology, information that was given to PNM by a group of concerned customers.

[41] Id.

[42] Id.

[43] Id.

[44] (Schoechle, Direct, Getting Smarter, p. 17, ¶3 and ¶4, p. 23 ¶5 and ¶6 et seq.)

[45] (TOP 2/27/17, p. 124, l. 1-2.)

diligence analysis process that would consider[46] a reasonable range of alternatives[47] [48] to PNM's desired outcome and without giving nearly adequate consideration of a multitude of risks[49] that PNM's customers would be subject to. PNM wants the benefit of a CCN without having to perform the due diligence, i.e., the rigorous analysis of alternative options and potential risks involved in the pursuit of its proposal. PNM's request for a prudency determination without rigorous analysis is a pie-in-the-sky dream. If PNM wants a prudency determination, then it must first demonstrate prudency. If PNM wants cost over-runs to be treated as if it had obtained a CCN, then PNM must first perform the due diligence necessary to apply for a CCN.

3. PNM Has Not Performed the Due Diligence Necessary to Demonstrate Prudence

Even if the Commission were to hold that PNM is not required to get a CCN for its AMI proposal, this would not relieve PNM of its responsibility to act prudently and in customers' best interests. CFRE asserts that CCN and integrated resource ("IR") planning statutes provide

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[46] "Q. So they didn't even consider that [AMR] in 2012?" A. "Not to my knowledge." (TOP 10/26/17, p. 11, l. 7-16.) Also see, CFRE Exhibit 3, p. 12:

CFRE INTERROGATORY 3-16 ALTERNATIVES

A. PLEASE LIST AND DESCRIBE ALL ALTERNATIVES TO THE AMI PROPOSAL THAT PNM ANALYZED.

OBJECTION / RESPONSE:

RESPONDENT: REBECCA TEAGUE

A. PNM analyzed the alternative of not installing AMI. PNM also analyzed an AMR meter project for the 2012 report required by the NMPRC (see PNM Response to AG 1-12 for copy of the report). (This report is now Commission Exhibit 1 (TOP 2/28/17 p. 313, Commission Exhibit 1))

[47] By "alternatives," CFRE means other metering options or other options to accomplish projected benefits claimed by PNM. These include but are not limited to the following: other types of meters such as AMR, other types of home energy monitoring systems, the ability and efficacy of upgrading PNM's SCADA network for managing the energy integration considerations of increasing renewables on the grid (and whether PNM's AMI proposal even accomplishes this), TWACS options, etc. We don't know what is available because PNM didn't perform the due diligence to find out and to suggest a reasonable range of alternatives. If PNM had proposed a range of reasonable alternatives, then the burden of proof would have shifted to intervenors, but PNM never fulfilled its prima facie burden of analyzing a reasonable range of alternatives.

[48] Case No. 2361, Recommended Decision, pp-35-36, adopted by February 6, 1992 Final Order Approving Recommended Decision to Dismiss Proceeding, 1992 WL 503187 (N.M.P.S.C.) (an applicant "cannot be permitted to ignore obvious issues in [its] initial filing by relying on some presumption of reasonableness" because "[t]his tactic unfairly switches the burden to Staff and intervenors (if there are any) to address these issues").

[49] (TOP 2/28/17, p. 116, l. 20-p. 117, l. 11.)

guidance for plant investment of considerable "magnitude,"[50] such as PNM's AMI metering system proposal. In essence, CCN and Integrated Resource Plan ("IRP") requirements, to the extent that they reinforce and assist in the making of a prudent decision, and to the extent that they evaluate the proposal in order to ensure just and reasonable rates,[51] would need to be met regardless of whether PNM does or does not request that the Commission issue a CCN. To wit, the Commission has held the definition of prudence is as follows:

> **Prudence** is that standard of care which a reasonable person would be expected to exercise under the same circumstances encountered by utility management at the time decisions had to be made. In determining whether a judgment was prudently made, only those facts available at the time judgment was exercised can be considered. Hindsight review is impermissible. **In resource acquisition cases, the Commission has held that utilities are required to conduct reasonable alternatives analyses before selecting resources** and that deficiencies in the analyses may warrant non-recovery of all or a portion of the costs of resources imprudently elected.[[52]] (Emphasis added.)

The New Mexico Supreme Court has acknowledged the following:

> The Commission considers only those facts known **or knowable** by a utility at the time of the decision, . . .[[53]] (Emphasis added)

Importantly, especially when considering PNM's cases, to be prudent, the utility does not just consider known factors, but the utility *must* consider ***knowable*** factors as well. Thus, general lack of knowledge, selective memory, and intentional ignorance, such as omission or lack of adequate consideration of a range of reasonable alternatives, lack of consideration of risk, and lack of looking into relevant and credible information that has been given to the utility company or filed

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[50] ". . . a discretionary expenditure of this magnitude. . . " (Ortiz Direct, 2/26/16, p. 8, lines 12-13.)

[51] (62-8-7.E.(1). NMSA, et al.)

[52] *Order on Burden of Proof and Specific Issues to be Addressed*, Case No. 2087, 10/4/98, p. 4-5; *Corrected Recommended Decision*, Case No. 15-00261-UT, 8/15/16, at 89, approved in *Final Order Partially Adopting Corrected Recommended Decision*, 9/28/16; *Final Order*, Re PNM Gas Services, Case No. 2759, 188 P.U.R. 4th 448, 453 (1998); et al.

[53] In re Petition of PNM Gas Services, 2000-NMSC-12, ¶ 63, 129 N.

in the case, constitutes a lack of due diligence and prudence on the part of the utility. In the Louisiana Supreme Court decision, *Alliance for Affordable Energy,* Inc. *v. Council of City of New Orleans,* 578 So.2d 949, 95, the justices relied upon the following definition in their consideration of prudence:

> . . . whether the utility followed a course of conduct that a capably managed utility would have followed in light of existing and **reasonably knowable** circumstances.[54] [Emphasis added]

The justices further noted:

> . . . the prudence test "is applied for the purpose of excluding what might be found to be dishonest or obviously wasteful or imprudent expenditures."[55]

Thus, a utility must actually consider a range of alternatives and attempt to foresee *knowable risks* in order to obtain a determination of prudence.[56] PNM's request for a prudency determination in the instant case[57] is unreasonable because PNM did not do its homework.

4. PNM Must Analyze Feasible Alternatives

The Commission has held that the utility carries the burden to substantiate, through an analysis of feasible alternatives, that its proposed resource acquisition will be cost-effective (produce a net benefit for ratepayers). The Hearing Examiner in NM PRC Case No. 15-00205-UT re-cited the Commissions "*OLE*" case as follows:

> ... a utility carries the burden in a resource acquisition case to show that the resource it proposes is the most cost-effective among feasible alternatives. The Commission there

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54 In re *Seabrook Involvements by Maine Utilities,* 67 P.U.R. 4th 161, 166 (Maine P.U.C., 1985).

55 *Missouri, supra,* 43 S.Ct. at 549, n. 1.

56 *In re Pacificorp,* the court found: "Pacific Power did not alter its course of action or consider alternatives of any kind.". . . "Pacific Power's contemporaneous cost-effectiveness analyses were demonstrably deficient, and did not demonstrate the rigorous review that a prudent utility should have performed prior to making these significant investments." *In re Pacificorp,* 2)12 WL 6644237, UE 246, Order No. 12 493, §IV(C)(3)(b) (Or. P.U.C. 12-20-12).

57 (Application, Executive Summary, p. 1, at I, second bullet point.)

rejected PNM's request for a CCN for a transmission line based on the Commission's determination that 'PNM's alternatives analysis is not sufficiently reliable' and that 'PNM has not properly shown that OLE is the best alternative even among those alternatives that PNM considered. Thus even assuming a need on the transmission system for the sake of argument, the Commission remains unconvinced that the public convenience and necessity require or will require the OLE Project as the proper response to such a need.' Recommended Decision, pp. 98, 102, 166 P.U.R. 4th at 355-356. . . [58]

In the *Order Partially Granting PNM Motion to Vacate and Addressing Joint Motion to Dismiss*, 12/22/15, NM PRC Case No. 15-00205-UT, the Hearing Examiner stated:

> Instead of specifying in advance the alternatives that a utility must analyze to support its CCN application, the Commission's practice has been to allow utilities to develop and attempt to justify the reasonableness of their proposals. After receiving the proposal, the Commission holds hearings in which the reasonableness of the utility's proposal is evaluated, with input from Staff and Intervenors.
>
> Applying the OLE analysis to the facts of this case, it is possible that the restrictive nature of the RFP recently issued by PNM may unreasonably limit the alternatives to be evaluated and compared to PNM's proposal. Although no statutes or rules currently require the use of RFPs in resource acquisition cases, the use of RFPs appears to be becoming *a reasonable practice to ensure compliance with the standard in OLE*. In some cases, such as the San Juan abandonment case at Case No. 13-00390-UT, the use of RFPs may not be needed due to time constraints or the demonstrated narrow nature of the resource need to be satisfied. In other cases, it might be found that the failure to use an RFP or the use of an unreasonably restrictive RFP may unreasonably limit the alternatives evaluated by the utility.
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> . . . PNM carries the burden of proof to show that its proposed resource is the most cost effective choice among feasible alternatives to serve PNM's resource needs.[59] [60]

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58 (NM PRC Case No. 15-00205-UT, 12/22/15, p. 10-11, *Order Partially Granting PNM's Motion to Vacate and Addressing Joint Motion to Dismiss*,)

59 (*Order Partially Granting PNM Motion to Vacate and Addressing Joint Motion to Dismiss*, 12/22/15, NM PRC Case No. 15-00205-UT, p. 11-12.)

60 Case No. 2361, Recommended Decision, pp-35-36, adopted by February 6, 1992 Final Order Approving Recommended Decision to Dismiss Proceeding, 1992 WL 503187 (N.M.P.S.C.) (an applicant "cannot be permitted to ignore obvious issues in [its] initial filing by relying on some presumption of reasonableness" because "[t]his tactic unfairly switches the burden to Staff and intervenors (if there are any) to address these issues").

In the final order in Case No. 15-00205-UT, the Commission affirmed the Hearing Examiner's above cited order.[61] The above finding was again reaffirmed in Case No. 16-00105-UT as follows:

> . . . [T]he Commission reiterates that PNM bears the burden of demonstrating that its proposed resource choice is the most cost effective resource among feasible alternatives.[62][63]

In NM PRC Case No. 15-00261-UT while reaffirming the OLE decision, the Hearing Examiner noted, the following:

> Under PRC precedent, a reasonable utility must consider alternatives before going forward with a project, and a new resource will not be approved if a better alternative is available. . . . The Commission recognized that it has authority to examine alternatives to needs identified by a utility, that there may be various solutions for such needs, and that it would not be in the public interest for the PRC to grant a CCN for a proposed project that might meet needs but is the worst among a range of alternatives.[][64]

The Hearing Examiner in 15-00261 further noted the following:

> Other state commissions have ruled similarly. *See, e.g., BP Pipelines (Alaska) Inc.*, Docket No. IS09-395-004 *et al.*, 2014 WL 897389, ¶ 13o (AL Reg. Comm'n *2-27-14)* ("[W]hile the Carriers need not consider *every possible* alternative, they should consider the more reasonable options and provide some rationale for selecting one option over the other."), *corrected on other grds. by* Errata (3-7-14).

In NM PRC Case No. 17-00129-UT, while addressing PNM's anti-competitive RFP bidding, The Hearing Examiner noted the following:

> . . . The Commission's broad power 'to regulate and supervise every public utility in respect to its rates and service regulations,' NMSA 1978, § 62-6-4(A), includes the authority to

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61 (Case No. 15-00205-UT, *Order Granting Motion to Withdraw Application and Closing Case,* 5/18/16.)

62 (Case No. 16-00105-UT, *Order Granting PNM's Motion to Withdraw Application,* 5/24,17, ¶10.)

63 (The "most cost effective" test, used in utility CCN cases, addressed by the Commission in the *OLE* case, was incorporated into the Commission's IRP Rules, 17.7.3.6, 17.7.3.7.I and 17.7.3.9.G(1) NMAC.)

64 (*Corrected Recommended Decision,* Case No. 15-00261-UT, p. 96-97.)

regulate provisions in a utility's RFP to ensure that long-term PPAs are placed on equal footing with PNM-owned generation. As the Hawaii Public Utilities Commission said:

> As a general matter, the 'primary role' of the commission in a competitive bidding process is to ensure that each competitive bidding process 'is fair in its design and implementation so that selection is based on the merits'; that projects selected through a competitive bidding process are consistent with the utility's approved integrated resource plan ('IRP'); that the utility's actions represent prudent practices; and that throughout the process, the utility's interests are aligned with the public interest even where the utility has dual roles as designer and participant. *In the Matter of PUBLIC UTILITIES COMMISSION*, No. 2007-0331, Order No. 23699, 2007 WL 3245915, § I(A) (Hawai'i P.U.C. lO-9-07).

The Affordable Solar Project should not be approved because PNM has not met its burden of proving that the Project is the most cost effective renewable solar resource procurement among available alternatives.

Yet, in PNM's AMI case, consideration of alternatives was even more restricted than in 17-00129-UT. In the AMI case, *PNM restricted alternatives prior* to engaging in an RFP process; the RFP process only explored bids for an AMI alternative. However, while the unreasonable restriction of alternatives may have come at a different point in 15-00312-UT, the above cited Hawaii P.U.C. case is clearly applicable in its recognition that the "primary role" of the commission, in a utility resource acquisition case, includes ensuring:

> . . . that the utility's actions represent prudent practices; and that throughout the process, the utility's interests are aligned with the public interest even where the utility has dual roles as designer and participant.

PNM repeatedly fails to align its interests with the public interest.[65] A robust alternatives analysis process can help to keep PNM's shareholder oriented bias in check.

[65] For examples see introduction.

5. Risks Must Be Considered

a. PNM did not try to assess project risks:

The following interaction demonstrates PNM's lack of serious consideration of risks that the AMI proposal may pose to ratepayers:

> Q All right. Miss Teague, I'm going to read you Interrogatory CFRE 1-14 and your response.
> []
> Q (By Mr. Manning) 'Please list and explain in detail any and all ways known to PNM that the AMI project will be detrimental to ratepayers.' Your response is none that you're aware of. Does the AMI project not present certain risks to ratepayers?
>
> A I am not aware of the risk that it presents to ratepayers.
>
> Q Miss Teague, have you tried to assess the risks that this project presents to ratepayers?
>
> A PNM did not perform a risk assessment on this project other than what's been provided in testimony.[66]

PNM cannot determine that its proposal is prudent without a comprehensive analysis of the risks that the project may pose to ratepayers. ***Ms. Teague acknowledged that PNM did not perform a comprehensive review of risks.*** Ms. Teague's statement that she is "not aware of the risk that it presents to ratepayers" is an indication of PNM's bias toward project implementation. If PNM was trying to present a balanced case, and if it were to actively and effectively represent PNM customers, then it would research and disclose project risks. Customers are also supposed to be represented by PNM attorneys and PNM's expert witnesses. Therefore, PNM must present substantive evidence that it has reviewed potential risks to ratepayers when seeking to acquire new resources. There is no such evidence in the case record.

[66] (TOP 2/28/17, p. 116, l. 20-p. 117, l. 11.)

b. Meter-life and other cost-benefit analysis assumptions are speculative:

CFRE has not yet found any evidence of AMI meters that have lasted 20 years.[67] However, as the record in this case demonstrates, there are sometimes unforeseen technological advances that may make AMI meters obsolete prior to their projected meter-life. Additionally, the more intricate the parts and the more electronics a meter has, the more likely some piece or component will fail or become obsolete. Generally speaking, from a commonsense perspective, more opportunities for failure will equate to more failures. However, Mr. Ortiz didn't seem to recognize the increased opportunity for meter failures:

> Q [By Mr. Gould] Do the Itron meters have a significantly greater life or less life, you know, on a standardized depreciation schedule?
>
> A The meter itself I would guess is basically the same. I mean, if you look at the meter, it's a standard meter. It just has some communication capability.[68]

Like so many other times in this case, when PNM witnesses understated risks, Mr. Ortiz minimized the differences between the AMI meters and the "standard" meters that PNM uses today. For example, we know that the AMI meters have a remote disconnect switch that PNM's "standard" meters do not have.[69] We know that AMI meters have a heat sensor alarm that is not included in the "standard" meters.[70] So, in addition to the communication equipment, there are a number of other components of the AMI meters that can malfunction and lead to the need for early replacement when comparing them to PNM's standard meter of today.[71] The same is true, but to a lesser degree, of PNM's standard meters of today vs. an analog meter; there are more electronics

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[67] (See additional meter-life discussion in section on "What Constitutes a "Factual Showing" of Net Benefit?")
[68] (TOP 10/25/17, p. 23, l. 10-16.)
[69] (TOP 3/1/17, p. 147 l. 5-9. Note that even in this clip, Mr. Hawkins understates the differences leaving out at least the heat-sensor-alarm)
[70] (TOP 3/1/17, p. 158, 4-10.)
[71] (In legal terms: "Anything that can go wrong, will go wrong," Murphy's law, formerly Sod's law; because, "it would happen to any poor sod who needed such a catastrophic event the least.")

to malfunction. But this does not seem to worry PNM because early replacement equals capital expenditures and capital expenditures lead to higher return on investments; consequently, a shorter meter-life can actually lead to financial benefit, at least for the meter manufacturer and for PNM's shareholders, i.e., rate base growth leads to earnings growth which leads to dividends growth.[72]

We have a few examples of early meter replacements in the case record; it has even occurred with PNM's sister company, Texas New Mexico Power Co. ("TNMP"). Another example, involving hundreds of thousands of meter replacements is cited in the Rebuttal Testimony of Tony P. Simmons.[73] PNM has a responsibility to evaluate "knowable" risks of its proposal; this should include a forthright evaluation of the risk of meters not meeting their projected meter-life.

As the case record shows, PNM was not forthright in that it did not disclose upfront, without being asked, that its sister company had an issue with technological obsolescence and, consequently, early meter replacements.[74] When Ms. Teague was asked directly about the risk of technological obsolescence, she did not appear to have looked into it deeply enough to know some basic details of what TNMP had experienced, including the number of meters that needed replacement and the timeframe that they had been in operation prior to the obsolescence.[75]

Mr. Ortiz claimed a similar lack of knowledge about PNM's sister company's experience with technological obsolescence, or, for that matter, any company's experience with technological obsolescence of AMI meters.[76] Mr. Ortiz minimized the possibility that it could be a risk:

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[72] (CFRE Exhibit 34, p. 6; CFRE Exhibit 9, p. 5; CFRE Exhibit 10, p. 5.)

[73] (Simmons, Rebuttal, p. 7, l. 13-21., also the attached Exhibit CFRE TPS 5, p. 1-17. Note: Mr. Simmons' testimony comes to an abrupt end because during the copying process page 8 was cut out. It went unnoticed until after it had been filed.)

[74] CFRE is not aware of PNM disclosing what TNMP's meter replacement rate has been, for the rest of its meters, i.e., any meters that have been replaced in addition to the meters replaced for the obsolescence issue.

[75] (TOP 2/28/17, p. 114, l. 16-22.)

[76] (TOP 2/27/17, p. 108, l. 17-19.)

> Q [By Mr. Manning] You talked about obsolescence being a very remote possibility. You called it a farfetched idea.[77] Are you familiar with the fact that TNMP had to replace some meters because of obsolescence, some AMI meters?
>
> A I'm not.[78]

Ms. Teague minimized the risk of the technological obsolescence, something that TNMP had experienced, and she stated that this particular sort of obsolescence would not be an issue for PNM. However, Ms. Teague "d[idn't] know" whether or not TNMP could have foreseen the risk:

> Q [By Mr. Manning] Do you believe that TNMP could have foreseen the technological obsolescence at the time that they proceeded with the project, with their installation?
>
> A I don't know.

We might think that Mr. Monroy, part of the team analyzing this proposal, might have brought attention to the issue, as he is responsible for revenue requirement and regulatory filings and auditing for both PNM and TNMP,[79] and he might have alerted the team to the risk of unknown revenue requirements due to technological obsolescence or early replacement issues, but there is no evidence that he alerted the others.[80]

Mr. Hawkins claimed that he was similarly uninformed. He only guessed the timeframe,[81] didn't know how many meters needed to be replaced,[82] and didn't know what the issue had cost the company.[83] CFRE concurs that some types of technological obsolescence are hard to foresee, others, less so. But one must fully consider the issue; one must ***at least try*** to foresee the risk, in order to have an informed, duly diligent, and knowledgeable opinion and an ability to assess the

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77 (TOP 2/27/17, p. 57, l. 12-13.)
78 (TOP 2/27/17, p. 107, l. 17-22.)
79 (Monroy, Direct, p. 1, l. 9-15.)
80 (TOP 2/28/17, p. 194, l. 8-11.)
81 (TOP 3/1/17, p. 129, l. 1-5.)
82 (TOP 3/1/17, p. 129, l. 6-11.)
83 (TOP 3/1/17, p. 129, l. 16-19.)

risk. If PNM's "experts" didn't even evaluate its sister company's experiences with AMS (Advanced Metering System), without a bench request order requesting information on the topic,[84] then how are we supposed to believe that PNM diligently researched risks associated with AMI?

Additionally, instead of investigating the real-world experiences of utility companies while formulating its assumptions, PNM relied upon *pre-deployment speculation* by other utility companies in order to justify some of its assumptions.[85]

c. AMI Meters Increased the Risk of Fire

PNM's witnesses similarly minimized and/or claimed ignorance on the increased risk of fire with AMI meters. Even after CFRE had submitted testimonies that addressed the issue, Ms. Teague claimed to have no knowledge on the issue. We had filed the following: Norman Lambe, Direct (CFRE Exhibit 7); Katie Singer Direct, 7/15/16 (which although stricken still put information about this risk in front of PNM); and Tony Simmons, Rebuttal, (CFRE Exhibit 8). We had been submitting interrogatories, and we had presented testimonies, but nonetheless, Ms. Teague claimed to have no knowledge on the issue. This certainly appears to be an example of intentional lack of knowledge and a lack of witness reliability:

> Q [Mr. Manning] Did previous utilities that have rolled out AMI technology have problems with meters catching on fire?
>
> A [Ms. Teague] Not to my knowledge.[86]

[84] (*Order Regarding Further Proceedings*, 3/31/2017.)

[85] (For some examples of pre-deployment prognostication by other utilities being used as a pretext for a PNM assumption, see CFRE Exhibit 3, 3-8 D., and the associated CFRE Exhibit 28.)

[86] (TOP 2/28/17, p. 145, l. 15-18.)

Rather than giving unbiased consideration[87] of the fire reports described in Mr. Lambe's testimony, Mr. Hawkins responded to Mr. Lambe's testimony as follows:

> The investigations mention conditions such as possible clip damage in the meter socket and clips that were spread apart. These conditions can be indicative of issues known as "hot sockets," or a poor meter to socket connection which can create a potential for arcing and increased heat. This poor meter to socket connection can be caused by an improper meter installation or pre-existing defects in the meter socket, both of which are independent of whether the meter is a smart meter.[88]

Mr. Hawkins's testimony gives a very inaccurate portrayal of the testimony and reports that Mr. Lambe presented. Here are some actual quotes from the reports, beginning with CFRE Exhibit NL 3a which stated as follows:

> Evidence of arcing behind the 'HP' socket confirms that sufficient heat would likely be produced to heat and relax the metal clips at this location. Further evidence supporting this position is provided by the finding of the missing two clips still attached to the 'HP' meter blades. These clips remained attached as the meter case melted and pulled away from the panel, ***most likely because they were below the origin of the heat***.[89] [Emphasis added.]

> Inspection of the upper two meter socket clips, still attached to the 'HP' meter blades, indicates symmetrical arcing on both legs. ***This is inconsistent with poor socket connections*** or loose bus connections inside the panel, which would invariably result in a one-sided fault pattern favoring one side over the other. It is, however, entirely consistent with the expected arc pattern that would result following exposure to open flame from burning plastic, such as the rear surface of the power meter. Supporting this argument is the presence of a molten-away and partially burned-away opening in the plastic rear face of the 'HP' meter, neatly centered just below the upper two socket clips and blades.[90] [Emphasis added.]

> ***All indications are that the fault originated inside the meter***, but a slight possibility remains that the origin may have been the result of poor contact between the meter blades and the panel socket clips.[91] [Emphasis added.]

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[87] (PNM's witnesses have a duel responsibility, to shareholders and to ratepayers. Therefore, they should be trying to assess the risks to both. If they refuse to look at the preponderance of evidence presented in a report, instead narrowly focusing on only that single point which justifies a predetermined prejudiced viewpoint, then they are not representing ratepayer's interests and not honestly evaluating ratepayers' concerns.

[88] (Hawkins, Rebuttal, p. 5, l. 11-17.)

[89] (Lambe Direct, p. 25-26/88 of pdf.)

[90] (Lambe Direct, p. 26/88 of pdf.)

[91] (Lambe Direct, p. 27/88 of pdf.)

The follow-up report is even more conclusive on the subject. CFRE Exhibit NL 3b stated the following:

> The contact points between the upper meter blades and the mating socket clips were inspected carefully after separation and ***showed no evidence of poor contact or localized overheating***.[92] [Emphasis added.]
>
> Photo No. 10: ***Clips were clearly well engaged with meter***.[93] [Emphasis added.]

Mr. Hawkins and PNM are tasked with looking out for both PNM shareholders and PNM ratepayers' interests and concerns. Considering this duel role, Mr. Hawkins's testimony should, at a minimum, be giving an unbiased account of what Mr. Lambe's testimony actually states. However, as the above quotes clearly demonstrate, Mr. Hawkins's recap of Mr. Lambe's testimony was certainly not unbiased, in fact, ***Mr. Hawkins clearly misrepresented the conclusions in the reports.*** Mr. Hawkins focused solely on the few statements in the reports that supported the common utility company position of ***denying*** AMI meter fire risk ***even when presented reliable evidence***. PNM is ignoring the fact that AMI meters are more likely to catch on fire than either analog meters or non-AMI digital meters. If Mr. Hawkins is willing to misrepresent written information that is right in front of us all, in black and white, what does he do with information when we do not have the ability to check up on his portrayal?

Mr. Hawkins further demonstrated the general utility industry defense of blaming meter caused fires on hot sockets in the following interrogatory responses:

> **2-4. H)**
> **HAS PNM PERFORMED ANY INVESTIGATION OR RESEARCHED WHETHER OR NOT IT BELIEVES THAT AMI METER INSTALLATION MAY INCREASE FIRE RISK IN ANY CIRCUMSTANCES?**
>
> **<u>RESPONDENT:</u> JONATHAN HAWKINS**

[92] (Lambe Direct, p.51/88 of pdf.)
[93] (Lambe Direct, p 58/88 of pdf.)

OBJECTION / RESPONSE:
PNM objects to this interrogatory on the grounds that it is vague; it is not clear what information the interrogatory seeks. Rule 1-026(B) NMRA; 1.2.2.25 NMAC. Without waiving that objection, PNM has no reason to believe that AMI meters increase fire risk. PNM has conducted research through on-line sources.

2-4. I)
WHAT WAS PNM'S CONCLUSION TO ANY RESEARCH AS PER CFRE 2-4. H?

RESPONDENT: JONATHAN HAWKINS
RESPONSE:
PNM's conclusion, based on results of investigations other utilities have done, was that meter fires were the result of either 1.) "hot sockets" which is possible with any meter change out (analog, solid state, or AMI) or 2.) an issue that was primarily isolated to a specific meter manufacturer who has since redesigned their meter. PNM did not choose the vendor that had past issues with meter design for its AMI Project.[94]

In response to Mr. Hawkins's assertions, CFRE first notes that meter-caused fires only became an issue in the public sphere after the advent of AMI installations; meter-caused fires were not an issue with analog meters. Furthermore, Mr. Lambe offered testimony that disputes that the problem of AMI meter caused fires were confined to only one utility company. (CFRE notes that Mr. Hawkins did minimally acknowledge that meter-caused fires are an issue with more than one manufacturer.) Mr. Hawkins claimed that the issue is "primarily" isolated to a specific meter manufacturer. Mr. Lambe testified about two companies that have been responsible for AMI meter caused fires:

> Instead 'smart' meters are routinely certified by industry groups such as ANSI and IEEE. All of the models of meters that have burned, and many have, have been certified by these industry groups. UL has a new certification standard that is said to have been developed to insure the safety of 'smart' meters, UL Standard 2735. But, even this certification is not sufficient. The very meters that have received this certification, Sensus and Landis & Gyr, have caused fires.[95]

[94] (CFRE Exhibit 12.)
[95] (Lambe Direct, p. 10, l. 1-6.)

Unfortunately, newspaper articles and other accounts, even at least two of Mr. Lambe's report exhibits don't note the meter manufacturer of the burned meters. This lack of naming the manufacturer has made it challenging to connect Itron with Itron meter-caused fires. However, the AMI meters that have been installed in British Columbia (and parts of Texas where meter fires were reported) are Itron meters. If one Googles "smart meter fires BC Hydro," the BC Hydro examples that come up will be Itron meter fires even though the manufacturer is not specifically named in most accounts. (There will also be information from BC Hydro's PR campaign, trying to put water on the fire, so to speak.) Again, the flare-up in meter-caused fires is a recent phenomenon and so are AMI installations. CFRE is not contending that it is a huge percentage of meters that catch on fire, but we do contend that AMI meters significantly increase the risk. If only one of PNM's customer's house were to burn and kill an occupant, because of an unneeded and expensive AMI meter project that could have been prevented, that would be one too many.

Additionally, removing and replacing meters gives an opportunity to damage the socket boxes (opportunity to spread the clips, which makes a looser connection, or to cause other damage). Therefore, the shorter the life of the meter the more frequently they will need to be replaced and consequently more fires will occur because of socket boxes and "hot sockets." This increase in fire potential is in addition to the increase in fires that occur because of AMI meters themselves. (Furthermore, plastic meters are more flammable than non-plastic meters such as the old analog meters. This is true, whether or not witnesses want to acknowledge the obvious.)

Norman Lambe, is the Senior Property Claims Examiner at Precision Risk Management, Inc., in Cypress, California. He has "worked in property claims approximately 30 years"[96] and has "been involved in the investigation, evaluation, and adjustment of insurance claims for

[96] (Lambe, Direct, CFRE Exhibit 7, p. 1, l. 6.)

property damage. This encompasses the investigation of the destruction to the named insured's buildings, structures, and business or personal property."[97]

Mr. Lambe states that he has "had first-hand experience in the following five 'smart' meter-caused fires cases:

> 2015-1369-77A--shopping center fire
> 2015-2031-77A---condominium complex fire
> 2013-9656-77A---apartment complex fire
> 2015-2156-77A---restaurant fire
> 2016-2692-77A--- hotel power surge"[98]

Mr. Lambe testified that utility companies sometimes remove meters, "before a proper investigation can be conducted."[99] This hampers investigation and likely leads to an undercounting of actual smart meter-caused fires.[100] Mr. Lambe discussed this issue as it relates to Claim number 2015-2031-77A, Exhibit CFRE NL 2:

> This case exemplifies the difficulty that we encounter when trying to obtain access to 'smart' meters in order to perform a proper investigation.
>
> We still have not been permitted the opportunity to inspect the meter by Nevada Energy. Residents stated that the 'smart' meter exploded. The inability to access the meters in 'smart' meter fire cases is a consistent problem.[101]

Mr. Lambe's CFRE Exhibit NL 3 a and b gave another example of meter removal hampering investigation. In this case, the meter was ultimately retrieved:

> CFRE NL 3 b reveals that the 'smart' meters were removed from the scene prior to completion of the fire investigation. This report indicates that the remote switching mechanism in a 'smart' meter was determined to be the cause of the fire.[102]

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97 (Lambe Direct, p. 1, l. 6-11.)
98 (Lambe, Direct, p. 2, l. 1-6.)
99 (Lambe, Direct, p. 2, l. 21-p. 3, l. 2; and, p. 4, l. 15-20.)
100 (Lambe, Direct, p. 4, l. 4-13.)
101 (Lambe, Direct, p. 5, l. 1-7.)
102 (Lambe, Direct, p. 6- l. 1-15.)

> This fire occurred solely and directly as a result of the installation of a defective meter into an existing and serviceable electrical panel by the utility company, NV Energy. The fire originated in a locked and concealed area that is accessible only to employees of NV Energy.[103]

Mr. Lambe described details of another incident, Friars Village Shopping Mall:

> Please note that as of the date of this testimony, more than two years later, we have not yet been able to gain access to our insured's 'smart' meter in order to perform the requisite investigation.[104]
>
> If the meter caused the fire, the utility would be responsible for the damages caused by the fire, not my insurance company; therefore, I believe that the utility does not want my company to inspect the meter.[105]

Mr. Lambe's recommendation was as follows:

> Installing 'smart' meters is not a prudent investment. It is not fair for PNM to put unnecessary risk onto the shoulders of its customers including the risk of 'smart' meters caused fires or health risks. Furthermore, how these AMI meters affect the electrical wiring systems of old homes and customer's appliances must be thoroughly studied. Finally, the absolute safety of any and all meters should be proven *before* they are installed, if ever they are installed.[106]

d. AMI and Health Risk

In this proceeding, CFRE has not focused on the health risks associated with AMI meters and radio frequency radiation ("RFR"). However, two of our witnesses did touch upon the topic. CFRE would like to note that the debate about the health effects of AMI meters and other WIFI devices reminds us of the debate on global climate change. CFRE's members were certainly convinced that the science was reliable on climate change twenty-five or more years before the debate was, for all practical purposes, clearly over in the public sphere. CFRE believes that the science is clear that RFR radiation is not good for most biological organisms. At this point it is

103 (Lambe, Direct p. 6, l. 17-20.)
104 (Lambe, Direct, p. 7, l. 18-20)
105 (Lambe, Direct, p. 8, l. 1-3)
106 (Lambe, Direct, p. 10, l. -p. 11, l. 3.)

less clear as to the precise levels of exposure and what the associated increase in risk is. We note that more study is necessary before risks associated with RFR will be as widely acknowledged or as definitive as the climate change example; however, we endorse the precautionary principal[107] as it relates to AMI meter installation.

Any potential benefit from PNM's proposal is speculative and/or marginal, so why would we take on the health, economic, fire, and other risks? Why would we take on these risks, including the health risk, ***without even researching and considering the non-wireless alternatives***? Taking on all of these risks is *not* a prudent approach. Both Mr. Lambe and Dr. Schoechle offered some insights on the topic. Mr. Lambe offered the following insurance industry perspective on RFR and health:

> I believe some of the problems associated with 'smart' meters are coming to a crescendo. Soon enough, one or more large property insurance companies will decide to exclude any damage to a building, business or personal property directly related to the malfunction of a 'smart' meter, or more specifically, 'smart' meter-caused fires. There is already one significant development whereby Lloyd's of London has issued an exclusion; by this I mean that they have incorporated an exclusion into their policies to exempt the company from paying for any 'smart' meter or other radio frequency radiation ('RFR') related illnesses. Electric 'smart' meters, or more specifically, an AMI system in whole is a particularly dangerous source because of the quantity, frequency, and pulsing nature of the output of this sort of radiation. Insurance companies were some of the earliest companies to recognize the threat of global climate change posed by greenhouse gasses, which is now a thoroughly accepted phenomenon. Now it appears that insurance companies will be amongst the first to recognize the dangers associated with health issues that result from exposure to RFR such as AMI systems and other RFR emitting devices.[108]
>
> I am also submitting Exhibit CFRE NL 5. This document includes an exclusion that indicates that an insurance company that has Lloyds of London as its reinsurer, will not pay for any physical illness that is directly related to the insured's exposure to radio frequency radiation ('RFR'). 'Smart' meters are one of the major appliances that produce RFR.[109]

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[107] (Schoechle, Direct, (p. 46/80 in pdf, ¶6, or, Getting Smarter About the Smart Grid, p. 28.)
[108] (Lambe, Direct, p. 8, l. 14 -p. 9, l. 8.)
[109] (Lambe, Direct, p. 3, l. 4-8.)

Dr. Schoechle gave an overview of some of the science on the topic.[110] He notes as follows:

> It is obvious from decades of research on a wide range of frequencies within the radiofrequency (RF) spectrum that EMFs [electromagnetic frequencies] have biological effects, and associated health effects are likely. But the nature and extent of such effects (including cumulative effects) and any associated risk is not clear. Such effects have not been well researched for all frequencies and power densities, including those relevant to smart meters.[111]

After an overview of some of the science on the subject Dr. Schoechle concluded as follows:

> In the face of widespread and growing health concerns, the unavoidable question arises: why invest in something with known potential for harm that would impact millions of people-- especially when there are other viable and arguably superior alternatives?[112]

6. PNM Disproportionately Represents Shareholder Interests:

a. The Public Utility Act Provides that Parties Must Bear their Own Costs

Section 62-13-3. A of the Public Utility Act provides for parties to bear their own litigation expenses. If PNM's customers are to bear the expense, or even half of the expense, of PNM's attorney fees, then those attorneys must represent customers' best interests, not unfairly represent shareholders in an unbalanced proportion. Since PNM attorneys have repeatedly worked to keep evidence of risks to ratepayers, evidence of impacts upon low income customers, evidence that AMI meters are more prone to catch on fire, evidence of potential negative health effects, evidence of economic risk such as potential early meter replacement, et al., out of the case record, shareholders must shoulder the legal expenses for PNM's AMI proposal--not PNM's customers. 62-13-3. states the following:

> 62-13-3. Costs.

[110] (Schoechle, Direct, (p. 42/80 in pdf, ¶4,-p. 46, ¶2), or, Getting Smarter About the Smart Grid, p. 24-28.)
[111] (Schoechle, Direct, (p. 42/80 in pdf, ¶5, or, Getting Smarter About the Smart Grid, p. 24.)
[112] (Schoechle, Direct, (p. 46/80 in pdf, ¶2, or, Getting Smarter About the Smart Grid, p. 28.)

> A. Except as otherwise provided by law, in all proceedings before the commission and in the courts, each party to the controversy shall bear his own costs and no costs shall be taxed against either party.
>
> B. In any commission rate proceeding in which the utility seeks rates to recover adjusted test-year litigation expenses there shall be no presumption that the litigation expenses are prudent. Nothing in this section shall be construed to create or imply a presumption of prudence for any utility expenditures not addressed in this section.
>
> C. As used in this section, "litigation expenses" means all attorneys' fees, consulting fees and other costs of litigation, including in-house expenditures.

As the plain language of 62-13-3 C. states, PNM's consulting fees, attorney fees, and its "in-house expenditures," employee salaries, etc., must be born by the "party to the controversy" who would benefit from the proposal as presented to the Commission, in this case, shareholders would be the beneficiaries. As per 62-13-3 A. these fees should not be "taxed against" ratepayers.

There are many indications that PNM chose not to look into evidence of risk to ratepayers, even when such information was provided to them. For example, PNM attempted to keep all of the testimonies filed by both CFRE and those filed by New Mexicans for Utility Safety out of the case record. PNM succeeded in a number of instances.

Another example of PNM not looking into examples of risk to ratepayers was noted at the October 2017 hearing. When *Citizens for Fair Rates and the Environment's Response to Public Service Company of New Mexico's Motion for Procedural Schedule* was filed with the Commission, CFRE provided to all parties some discovery responses from an Arizona Public Service Company ("APS") rate case that detailed APS's experiences with early meter replacements (and allegations of APS's AMI meters causing fires), and CFRE disclosed its belief that Navopache Electric Cooperative was also planning early meter replacements.[113] CFRE was

[113] (TOP 10/26/17, p. 130, l. 17-p. 131. L. 1.)

disallowed from putting the *certified* corroboration of some of the evidence that we had presented in our response to *PNM's Motion for Procedural Schedule* into the record in the instant case.[114] However, the information was recognized in the *Order Establishing Further Procedural Schedule and Addressing NMUS Motion to Dismiss*, June 13, 2017. In said order, the Hearing Examiner determined that the information was within the scope of the further proceeding.[115]

A utility has a duel role, to look out for both ratepayer and shareholder concerns. If PNM was as concerned with risks to ratepayers as it is with rewards to shareholders, then it would have looked into the credible examples of potential problems with AMI meters that CFRE brought to PNM's attention. PNM ***must*** evaluate the risks of its proposal; intentional ignorance is not the same thing as due diligence. The actual experiences of the utility companies who have had less favorable real-world occurrences with AMI technology should have been considered in any prudent AMI project analysis.

PNM's disproportionate representation of shareholder concerns demonstrates a bias in favor of shareholders that should preclude PNM from recovering costs from ratepayers. CFRE does not get reimbursed by ratepayers to research project risks. However, CFRE did obtain certified copies of the above-mentioned APS discovery requests to authenticate as much of the information we had cited as was possible. In contrast, PNM has a duel role in that ***it*** has **the responsibility** to prudently analyze the risks to ratepayers. In this example, and throughout the rest of the instant case, CFRE (and arguably every other intervening party) has done more to protect ratepayers' interests than PNM has done.

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[114] (The certified copies not only corroborated, but they expanded, through supplemental responses, upon a couple of the APS discovery responses.)

[115] "Thus, the parties may address, among other relevant matters . . . the further information CFRE cites regarding the early replacement of AMI meters by other utilities," (*Order Establishing Further Procedural Schedule and Addressing NMUS Motion to Dismiss,* June 13, 2017, p. 5.)

b. Shareholders Would be the Party to Reap the Financial Benefits of AMI Deployment

While the projected financial benefits to ratepayers of an AMI deployment remain speculative, and CFRE contends the savings would never materialize, PNM's shareholders would, for certain, "earn" an estimated $54.621 million.[116] This estimate was calculated prior to PNM's "financial enhancements,"[117] which were described in PNM's October 13, Rebuttal Testimonies. The "financial enhancements" reduced, but did not eliminate, PNM's return on the existing meters, a return that PNM wishes to maintain even while receiving a return on investment for its new meters.[118] The "enhancements" would also eliminate PNM's return on severance costs.[119] Consequently, PNM's pretax return is likely now $46.785 million,[120] still approximately *three times as much* as ratepayers could benefit *under the most optimistic scenario*,[121] if AMI were implemented.[122]

As discussed earlier in this brief, if PNM were to receive a determination from the Commission that the AMI project was a prudent investment, that would not only insulate PNM from a reduction in its return, but it would set the table for even greater shareholder profits. Similarly to how recovery for a power plant would be treated, if PNM's initial AMI investment was deemed prudent, then resultant costs that accrued would normally, by default, be deemed

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116 (Crane, Response, p. 10, l. 11-p. 11, l. 14.)
117 (Ortiz Rebuttal, p. 2, l. 1.)
118 (Ortiz, Rebuttal, p. 2, l. 5-9.)
119 (Ortiz, Rebuttal, p. 2, l. 10-12.)
120 This figure is reflecting a pre-tax return on the new meters of $42,846,534, based on a return of 7.23%; a pre-tax return on the customer education regulatory asset, of $182,714, based on a return of 7.23%; and, a pre-tax return on the existing meters of $3,756,225., based on a cost of debt of 4.93%.
121 Three times PNM's speculative projected savings to ratepayers which is currently $16.1 million (Ortiz, Rebuttal, p. 2, l. 16-19), is $48.3 million.
122 (Mr, Ortiz admitted that, had PNM not offered the "enhancements", the project could have actually cost customers about $900,000., just with the implementation of the cost over-run rule, prior to any need for further cost justification. (TOP 10/25/17, p. 85, l. 20-p.86, l. 12.) "Under the cost overrun rule, PNM would be able to recover without additional justification up to 10% . . . " (TOP 10/25/17, p. 46, l. 6-10.) Mr. Ortiz claimed that he hadn't "actually done that math before." (TOP 10/25/17, p. 46, l. 4-6.) This math was the essence of CFRE's motion to compel on our ninth set of discovery. In its response, PNM called this point "convoluted." Coincidentally, this occurred shortly before PNM made the "enhancement" adjustments in its 10/13/17 Rebuttal Testimonies.

prudent costs of operating and maintaining the AMI metering system. Consequently, under that scenario, **if** the meters were to last 10 years (longer than in some places, shorter than in others), then the ***projected*** financial benefit for ratepayers would turn into roughly a hundred-million-dollar ***liability***, **and the shareholder financial benefit could roughly double**.[123]

Again, the risk vs. reward of PNM's proposal is extremely disproportionate. PNM's failure to research and to honestly disclose risks demonstrates that, in accordance with Section 62-13-3.A of the Public Utility Act, PNM's shareholders should bear the costs incurred in pursuit of PNM's ill-conceived proposal to expand its rate base through the implementation of AMI.

7. AMI Meters Can Be Used to Suppress Rooftop Solar Installation and Hurt Low Income Customers

The answer to the question, "can AMI meters be used to suppress rooftop solar installation," depends on which Scott Vogt testifies. Is it the Scott Vogt that Mr. Manning cross-examined; or, is it the Scott Vogt that was examined on re-direct by Mr. Phillips?

Mr. Vogt confirmed that PNM does not currently have residential demand charges.[124] Mr. Vogt explained that should PNM ever switch from a two-part tariff (a rate design with a customer charge and a volumetric charge), to one that included a demand charge, it would separate the demand requirements into a different category.[125] It would reduce the volumetric charge,[126] by splitting the "one bucket of costs" into two "different rate elements."[127] ***Mr. Vogt testified that***

[123] These are very rough estimates. Again, PNM did not analyze any alternative meter-live scenarios so that we would have better estimates. (TOP 10/26/17, p. 97, l. 13-22.) PNM did not analyze alternative meter-live scenarios even though it will not guarantee that its 20-year meter-life projection will be realized. (TOP 10/25/17, p. 79, l. 8-10.)
[124] (TOP 3/1/17, p. 86, l. 22-24.)
[125] (TOP 3/1/17, p. 87, l. 15-20.)
[126] (TOP 3/1/17, p. 87, l. 21-23.)
[127] (TOP 3/1/17, p. 88, l. 6-12.)

AMI meters are a first and necessary step if the company wanted to introduce rate designs that incorporate residential demand charges.[128] Mr. Vogt "believe[s] that it's true" that if PNM implemented demand charges, it would make the pay-back longer if a customer wanted to put solar panels on their roofs.[129] ***Mr. Vogt acknowledged that if the Commission were to allow PNM to install AMI meters, PNM would achieve the first step towards its ability to reduce the economic benefits to ratepayers of installing rooftop solar***.[130]

However, after a break, PNM had its opportunity for redirect of Mr. Vogt, and then Mr. Vogt joined the large list of PNM witness whose testimony is self-contradictory. *On redirect, Mr. Vogt testified that AMI meters were not necessary for PNM to implement demand charges*.[131] When witnesses contradict themselves, especially this quickly and directly,[132] it demonstrates a lack of reliability of their testimonies in their entirety. It further demonstrates PNM's bias toward the benefit of shareholders and PNM's desire to be less than forthright about potential impacts upon ratepayers.

On redirect by Mr. Phillips, Mr. Vogt further clarified that Commission approval would be necessary prior to any implementation of demand charges.[133] According to Mr. Vogt, "PNM has not expressed an intent to go forward with demand rates."[134] In fact, Mr. Vogt claims that he "is not familiar with what other companies are doing."[135] CFRE notes that not being familiar with issues and experiences that other companies have had with AMI has been a common theme among PNM witnesses.

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128 (TOP 3/1/17, p. 88, l. 19-22.)
129 (TOP 3/1/17, p. 88, l. 24-p. 89, l. 11.)
130 (TOP 3/1/17, p. 89, l. 12-p. 90, l. 20.)
131 (TOP 3/1/17, p. 99, l. 6-12.)
132 (as PNM's other witnesses did as well)
133 (TOP 3/1/17, p. 99, l. 13-15.)
134 (TOP 3/1/17, p. 89, l. 17-18.)
135 (TOP 3/1/17, p. 88, l. 2-5.)

Despite Mr. Vogt's testimony on the subject, PNMR apparently has its eye on the money-making capabilities of rate designs such as demand charges, higher fixed fees, and decoupling, which are depicted as aspects that can help lead to above industry average earnings growth in[136] PNMR's *plug in here Investor Meetings,* June 2016 (CFRE Exhibit 34). This illustration doesn't specifically state how "Higher Fixed and Demand Charges" can lead to "Above Industry Average Earnings Growth." And, theoretically speaking, the rate design shouldn't really lead to growth potential because it should only shift how cost recovery occurs; it shouldn't increase cost recovery; therefore, why does PNMR depict, in this blow-out bubble on page 10, higher fixed charges, demand charges, and decoupling, under the heading of and as part of that which will lead to above industry average earnings growth?[137]

CFRE asserts that the answer to that question lies with complexity. Various parties with more experience than CFRE in rate cases have told us that rate cases were simpler prior to the switch to the future test year methodology. Simpler, generally speaking, equals more transparent, more transparent makes regulating more straightforward and easier to achieve. The more assumptions and projections, vs. a straighter forward formula approach, the harder verification becomes.[138] AMI meters almost inevitably lead to more complicated rate designs; this would necessitate more assumptions about how to facilitate cost recovery to fulfill the revenue requirements that were determined through the now used, more complicated, future test year methodology. Do we really want to add more complexity and less transparency to our rate case

[136] (CFRE Exhibit 9, p. 10.)

[137] Dr. Schoechle referred to "dynamic pricing" as a "scheme." (Schoechle, Direct, (p. 37/80 in pdf, ¶4), or, Getting Smarter About the Smart Grid, p. 19.)

[138] This concept is applicable to PNM's AMI proposal as well, while some of, PNM's assumptions and projections are more easily verified, such as savings due to replacing people's jobs with ROE earning equipment, many other important assumptions in the AMI proposal are highly speculative.

proceedings?[139] We all witnessed the hundreds of millions of dollars in "errors" that was almost concealed by the 'Strategist' black box in Case No. 13-00390-UT, do we really want to give PNM another black box?

A couple of the questions in the PNM Resources Q-3 2016 Results-Earnings Call Transcript,[140] demonstrate that investors and PNMR CEO Pat Vincent-Callawn understand the earnings potential of both AMI meters and associated rate design opportunities:

> Paul Patterson
>
> Okay. All of my questions have been answered, but just the smart [indiscernible] thing, I know it's been suspended, I think what's the outlook for that? I do not think it is in your plan but is that just off the table for now or how should we think about that?
>
> Pat Vincent-Callawn
>
> We are still looking at that. Talking with folks that are part of the case we would obviously still like to do that, it is a little tough c[a]ll right now given the economy in New Mexico because obviously one of the things that AMI does is, over time it will eliminate meter reading jobs but we are still working on that one.
>
> …
>
> John Barta
>
> And then, I guess lastly, are you aware [if] the commission is taking on an initiative or if they're looking at any potential workshops on better understanding some of the current rate design issues that are out there?
>
> Pat Vincent-Callawn
>
> They are not. They are looking at some workshops possibly on that metering but nothing on the rest of rate design. We tend to handle that here in New Mexico through our rate cases. So for example in the last rate case we – bumped our fixed charge up a little bit and we were able to eliminate some of the residential subsidies and keep the large commercial

[139] CFRE understands that there are no rate design changes specifically on the table in this proceeding, but what is PNM's proposal really about? (shorter lifespan of meters = more capital expenditure; replace jobs with equipment = more capital expenditures; potential for rate designs that are more complicated = less transparency; potential for rate designs that reduce the volumetric portion of bills = less incentive for customer energy curtailment; and, increased payback period for rooftop solar = keeping PNM ownership of power generation resources.) Okay, we apologize for the transgression into commonsense thinking, but prudence does include a "standard of care which a reasonable person would be expected to exercise," and commonsense thinking is something that reasonable people do (sometimes).

[140] (CFRE Exhibit 11.)

> and industrial customers much more harmless than before. So we deal with them sort of individually through our rate cases here in New Mexico.[141]

Do the PRC and intervenors want to spend precious resources fighting PNM on demand charges or other complicated charging schemes in every future rate case?

Dr. Schoechle's testimony indicates that even well-designed time-of-use rates can be detrimental to the environment:

> In reality, shaving peak energy usage by shifting loads may actually increase energy bills as well as CO2 emissions by increasing dependency on coal [and expensive nuclear] baseload generation, especially as electric vehicles emerge.[142]

If PNM did ever succeed in implementing demand charges for customers who do not have them now, the same shift in rate recovery that would make solar installation less affordable would hurt low income customers.[143] These are more often low energy users; this shift would benefit the folks who are not as careful to keep their electricity consumption down because the *volumetric* charge would be reduced.[144] This *decrease in the cost of the electricity* itself would be achieved by splitting the bucket of costs in two.[145] Consequently, this would *decrease some customers' motivation to conserve energy* because this charge, the volumetric charge, would then make up a smaller portion of their bills. Thus, if implemented, demand charges would be harmful to the environment in this way in addition to the solar disincentive discussed above.

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141 (CFRE Exhibit 11.)

142 (Schoechle, Direct, (p. 21/80 in pdf, ¶3), or, Getting Smarter About the Smart Grid, p. 3.)

143 "Jepson also commented that dynamic (i.e., time-based) rates (a justification for smart meters) are punitive to certain types of customers, including many elderly, those with sick or young children at home, those who work second or third shifts, and many small businesses. The Governor added that while time-based rates can be useful and should remain an option for electric customers, these rates can be handled in better ways and customers should not be forced to their economic detriment." (Schoechle's recap of Brief of George Jepson, Attorney General of Connecticut before the state Department of Utility Control (CDUP) urging rejection of Connecticut Light & Power's (CL&P) plan to install AMI. Schoechle, Direct, (p. 38/80 in pdf, ¶5), or, Getting Smarter About the Smart Grid, p. 20.)

144 (TOP 3/1/17, p. 87, l. 21-23.)

145 (TOP 3/1/17, p. 88, l. 6-12.)

Dr. Schoechle made the following argument that investment in AMI metering is misguided:

Smart meters:

* do not reduce electric bills but may actually increase them (due to introduction of dynamic pricing schemes, rate recovery of deployment costs, etc.),
* do burden consumers with costly meters and proprietary meter networks rather than utilize already existing communication networks, while costs are passed to ratepayers by regulators through rate increases and generous guaranteed ROR on assets,
* do not improve or manage consumer energy use or facilitate supply/demand balancing, consumer demand response, or integration of renewable energy,
* do destroy local jobs, and
* do divert or squander dollars that could have brought us closer to a renewable-based electricity infrastructure.[146]

8. a. Mr. Hawkins Fails to Admit That AMI Meters Have Been Hacked

In this day and age, all one has to do to be more diligent than PNM on many of the issues and concerns with this project is to spend a few hours on the internet. Mr. Hawkins did acknowledge doing some internet research,[147] on the fire issue; however, there is no indication that PNM even used the readily available "google" to look into many of ratepayers' expressed concerns. Perhaps, for example, if PNM's witness Hawkins, "Manager of Advanced Technology and Strategy,"[148] had googled "have smart meters ever been hacked?"[149] then PNM's technology expert would know that it has been done.

146 (Schoechle, Direct, (p. 37/80 in pdf, ¶4), or, Getting Smarter About the Smart Grid, p. 19.)
147 (CFRE Exhibit 12, see CFRE Interrogatory 2-4 H.)
148 (Surrebuttal Testimony of Johnathan Hawkins, 2/27/17, p.2, l. 5-10.)
149 Googling, "how to cheat a smart meter," could potentially expose some other project risk. Such information has been vetted in the instant case. According to the instant case record, AMI meters will supposedly cut down on electricity theft and save ratepayers an estimated $920,226. (Teague Supplemental 9/5/17, p. 15, l. 13-20.)

Or, perhaps, if PNM had done the due diligence of reviewing the Direct Testimony of Katie Singer,[150] testimony that PNM did (diligently?) get stricken from the case record, to see if she shared any information that a reasonably prudent company might actually want to know, perhaps then Mr. Hawkins would have had the knowledge that smart meters have been hacked. However, as the case record clearly demonstrates, Mr. Hawkins, has no such knowledge:

> Q. Mr. Hawkins, I understand that you testified previously that you were not aware of any successful hackings of AMI meters. Are you -- is that still your understanding today?
>
> A. That's correct. I still -- AMI systems, I am not aware of a successful hack.[151]

CFRE finds Mr. Hawkins's above statement a little hard to accept as forthright, both for reasons expressed above and for reasons that we are not at liberty to discuss at this time.[152]

b. Mr. Hawkins Fails to Admit That AMI Meters Would Introduce a Cyber Security Risk

The case record does have some indication that PNM acknowledges that there is a cybersecurity risk associated with AMI implementation; the record has confidential information in it. The record has "cyber security information in Confidential PNM Exhibit RRT-2 (April 24, 2017 Supplemental) [that] could be used to compromise the cyber security protections for the AMI Project and should not be publicly disclosed."[153] PNM requested confidential treatment for the following "information regarding the cybersecurity specifications of Itron's proposal[,][] pages

[150] (Not in case record, but readily "knowable" to PNM; CFRE KS Exhibit 22; also p. 25-34 for further cybersecurity discussion.)
[151] (TOP 10/26/17, p. 143, 12-17.)
[152] (CFRE believes that documents which will someday be publicly available will demonstrate that Mr. Hawkins's stated lack of knowledge on this topic was disingenuous and that he had been presented with the information in yet another instance.)
[153] (*Public Service Company Of New Mexico's Notice of Intent to Use Confidential Material and Request for Confidential Treatment of Confidential PNM Exhibit RRT-2 (April 24, 2017 Supplemental) and Confidential PNM Exhibit RRT-3 (April 24, 2017 Supplemental),* p. 2.)

305, 307-8, 310, 315, 316, 360, 541- 3, 579, 587, 590-1, 595, 597, 608, 609, 610, 611,612, 613, 616, 617, 618, 620, 621,622, and 625."[154]

We know that PNM and the meter manufacturer acknowledge that there is a cyber security risk associated with PNM's proposal. PNM acknowledged that "[p]ublic disclosure of this information could conceivably permit unscrupulous individuals to harm PNM and its customers by disabling or overriding the AMI Project's security to alter customer usage data or even disconnect service."[155] However, perhaps for the sake of making a decision based upon the case record, perhaps we don't know that there is a cyber security risk because the above admission by PNM didn't specifically get submitted in the case record (as far as CFRE knows). The blackouts themselves stand as proof of a cybersecurity risk, this fact, this confidential information, is in the case record.

However, Mr. Hawkins has clearly testified that PNM's proposal **does not** pose a cybersecurity risk:

Q. DO SMART METERS POSE A CYBER SECURITY RISK?

A. No. . . [156]

Did PNM's attorneys keep its own Manager of Advanced Technology and Strategy in the dark about the cybersecurity risk that PNM claimed in order to receive confidential treatment of (some of) the above-listed pages? Or, was Mr. Hawkins not honest in his response to the question that he posed to himself in his own rebuttal testimony?[157] Clearly PNM knows that there is a

[154] (Id. p. 2)
[155] (Id. p. 3)
[156] (Hawkins, Rebuttal, p. 7, l. 11-13.)
[157] "I manage the team that designs and monitors network management and cyber security for PNM's energy delivery systems . . ." (Hawkins, Rebuttal, p. 1, l. 10-12.)

cybersecurity risk, as PNM acknowledged, when it requested confidential treatment of information based upon the fact that there is a cybersecurity risk.[158]

But not only does PNM know that there is a cyber security risk, Mr. Hawkins has attested to the fact that there is a risk. Luckily, in the instant case we can rely upon the Hearing Examiner's *Order Partially Granting PNM Request for Confidential Treatment of Itron Exhibits*, October 13, 2017, wherein the Hearing Examiner summarized this fact when he summarized Mr. Hawkins's affidavit which was attached (as Exhibit C) to *Public Service Company Of New Mexico's Notice of Intent to Use Confidential Material and Request for Confidential Treatment of Confidential PNM Exhibit RRT-2 (April 24, 2017 Supplemental) and Confidential PNM Exhibit RRT-3*, April 24, 2017:

> In its April 24, 2017 request for confidential treatment of Exhibits RRT-2 and RRT-3, PNM stated that the information in Itron's proposal could be used to compromise the cybersecurity protections for the AMI Project. Jonathan Hawkins, PNM's Manager of Advanced Technology and Strategy, stated in an affidavit filed by PNM that Itron's proposal includes descriptions of processes for accessing the electronic functions of the customer meters in sufficient detail such that it could facilitate unauthorized access to data contained in, or operations of, the meters. He stated that the redacted information contains sensitive information describing the security features and capabilities of the AMI Project, including detailed design specifications of the AMI Project's security infrastructure and a description of how the security software and meter firmware are updated and maintained. He stated that, if unauthorized people were to acquire this security information, they could conceivably use the information to harm PNM and its customers, including by altering meter information to inaccurately report data; updating the firmware in the meter to do malicious things; or even operating the remote disconnect to put people out of power. Hawkins Affidavit, attached to PNM Brief as Exhibit C, paras. 3-4.[159]

CFRE wonders how PNM's grid would react if many or all of PNM's customers' power got turned off by cyber offenders (hackers). After all, this is a potential that Mr. Hawkins

[158] ((*Public Service Company Of New Mexico's Notice of Intent to Use Confidential Material and Request for Confidential Treatment of Confidential PNM Exhibit RRT-2 (April 24, 2017 Supplemental) and Confidential PNM Exhibit RRT-3 (April 24, 2017 Supplemental),* p. 2-3.)

[159] (*Order Partially Granting PNM Request for Confidential Treatment of Itron Exhibits,* October 13, 2017, p. 3.)

acknowledged was possible. Did PNM analyze this risk within its insufficient attempt to substantiate a prudency determination?

Contrasting Mr. Hawkins's above quoted Rebuttal testimony that clearly states "[n]o," smart meters do not pose a cybersecurity risk, with his above summarized affidavit makes CFRE wonder what is the purpose of the word "strategy" in Mr. Hawkins's job tittle? When PNM witnesses contradict themselves and are, frankly, outright dishonest, as demonstrated above, this shows us that their testimony is not reliable and should not be relied upon to support the implementation of the PNM's AMI proposal.

9. a. PNM's AMI Proposal Must Comply with the The New Mexico Engineering and Surveying Practice Act

As with the issue of the need for a CCN, CFRE incorporates our *Motion to Dismiss* and the *Brief in Support of Motion to Dismiss* by reference. Please refer to said documents to review CFRE's arguments previously made on this issue.[160] We offer the following clarifications and additional discussion on the applicability of the Engineering and Surveying Practice Act to PNM's AMI proposal:

PNM's employees perform engineering services for the public by specifying what meter sockets its customers must purchase and by designating which meters it will provide to fit into

[160] (Also, please see other arguments on the issue elsewhere in this brief)

those meter sockets. It appears as though Mr. Hawkins was in a supervisory role[161] toward this end despite the fact that he is not a NM P.E.[162]

In most cases these meter-socket assemblies are accessible to the general public as they are located on customers' residential dwellings and on businesses' buildings, ***not*** on PNM-owned properties which PNM utilizes for its own ***internal*** affairs (i.e., the operation of the employer's business, where only the employer and the employee are involved and have access).

Mr. Ortiz did confirm that he understood that the scope of the project is more than merely internal, that it encompasses the utility/customer interface (i.e., the point of electricity delivery to its customers, the public).[163] Mr. Ortiz also confirmed that "PNM prescribes or dictates what kind of meter boxes the customers must have."[164]

The above described engineering services provided by PNM to the public, as well as the engineering services involved in ***determining what kind of meters the utility company will install into the customer-owned boxes***, clearly exemplifies that the 61-23-22 B. exemption does not apply to PNM's AMI system proposal or to those PNM employees who are working on PNM's proposal. The 61-23-22 B. exemption provides:

> An engineer employed by a firm, association or corporation who performs **only** the engineering services involved in the operation of the employer's business shall be exempt from the provisions of the Engineering and Surveying Practice Act, ***provided that neither***

[161] Mr. Hawkins has apparently been performing engineering and design work without a P.E. license for quite some time "Prior to my position as the Manager of Advanced Technology and Strategy, I managed the Electric Distribution Standards Department at PNM. The Electric Distribution Standards Department is responsible for setting engineering design standards and specifications for materials used in the construction of the electrical distribution system. Electric Distribution Standards included responsibility for Meter Standards." (Surrebuttal Testimony of Johnathan Hawkins, February 27, 2017, p.2, l. 5-10.) CFRE would like to point out that even though Mr. Hawkins was in a supervisory role relating to standards, he failed to acknowledge that one takes measurements in order to determine ANSI C12.10 compliance; instead, he provided CFRE with a "Test Report" for other standards that did not contain any measurements. (See CFRE 4-4, CFRE Exhibit 14 and PNM's response in its entirety, PNM Exhibit 34. Also see TOP 10/25/17, p. 135, l. 13-p.136, l. 16.)

[162] (TOP 3/1/17, p. 113, l. 12-14.)

[163] (TOP, 2-27-17, p 106, l. 4-5 and l. 12-15.)

[164] (TOP, 2-27-17, p 106, l. 16-23.)

> ***the employee nor the employer offers*** **engineering services** ***to the*** **public**. (Emphasis added.)

Furthermore, this project could potentially affect the life, health, and safety of the utility company's customers and the broader public, as well as customers' personal property because PNM's AMI project includes installation of meters, most often into customer-owned meter boxes, located on customer-owned properties, and attached to customer-owned structures. These are not engineering services that are "only" involved in the operation of the utility company's business. As mandated by the Act, PNM's customers and the general public should have *confidence* that a professional engineer has reviewed and certified the project.

In *Public Service Company of New Mexico's Consolidated Response in Opposition to Intervenor Citizens for Fair Rates and the Environment's Motion to Dismiss and Motion to Suspend Proceedings and Brief in support Thereof*, February 22, 2017, PNM makes the following assertion:

> If the Commission were to adopt CFRE's arguments, it would imply that almost every in-house engineering decision affecting the operation of a regulated public electric utility would fall under the auspices of the Engineering Act.

PNM's assertion is without merit. Nowhere in CFRE's motion or brief did CFRE make an argument of such a broad scope, to the contrary, CFRE specifically acknowledged the that 61-23-22 B. exemption exists and would apply under certain situations. In response to PNM's assertion, CFRE points out that PNM fails to acknowledge that the Act applies to utility companies, despite the fact that 61-23-3. NMSA is clear that engineers' professional expertise is required for certification and oversight of the **design of systems in connection with any utilities.** The act clearly applies to PNM's advanced metering infrastructure proposal.

> E. “engineering", "practice of engineering" or "engineering practice" means any creative or engineering work that requires engineering education, training and experience in the application of special knowledge of the mathematical, physical and engineering sciences to such creative work as consultation, investigation, forensic investigation, evaluation, **planning and design of engineering works and systems, expert technical testimony, engineering studies** and the review of construction for the purpose of assuring substantial compliance with drawings and specifications; any of which embrace such creative work**, either public or private, in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects** and industrial or consumer products or **equipment of a mechanical, electrical**, hydraulic, chemical, pneumatic, environmental or ***thermal nature***, insofar as they involve **safeguarding life, health or property**, *and including such other professional services as may be necessary to the planning, progress and completion of any engineering work*. (Emphasis added.)

CFRE poses the following question to both PNM and the Commission: would the Act specifically state that it applies to utilities and then exempt **all** utility projects, systems and equipment that may affect the public’s health and property? That is apparently what PNM would have the Commission believe. CFRE asserts that the NM legislature would not specify that the Act applies to utilities’ projects and then exempt **all** utility projects. That interpretation simply does not make any sense whatsoever.

b. What Utility Company Projects Require Certification by a Professional Engineer?

Therefore, the Commission is left to consider what projects the Act *is* intended to cover. CFRE understands the question of what the Act is intended to cover is more complicated than the question of whether or not the Act covers PNM’s AMI proposal. CFRE argues that there could not be a clearer example of a utility project that is covered by the Act. PNM’s proposal could affect the public’s *property and safety*; it involves *electrical equipment* in *connection with a utility*, being installed upon customer-owned *structures and buildings*, usually located upon customers’ private property, not on internally, company-owned properties.

CFRE asserts that, in accordance with the Act, P.E. oversight and certification is clearly required for an electric utility's 1) evaluation and selection of metering equipment and systems, 2) formulation of the meter installation instructions,[165] 3) selection of meters' protective devices, i.e., the fuses in the transformers that protect the meters, as well as, 4) review of specifications that PNM provides on the types of socket boxes customers must have. **CFRE asserts that these four items are clearly within the scope of the Act.**

However, are construction plans for transmission lines that may be located on public rights of way and could potentially affect the public safety also covered by the Act? This example is less clear than the above listed examples. Even less clear is whether substations, which are not accessible to the public, would be covered by the Act. Could these be located in residential neighborhoods, adjacent to public or private property that is accessible? Would that make them fall under the jurisdiction of the Act? CFRE respectfully suggests that the Commission would benefit from clarification from the New Mexico Board of Professional Engineers and Professional Surveyors on these issues. CFRE respectfully recommends that the Commission contact the Board and request an "advisory opinion" to clarify any ambiguity in the 61-23-22 B. exemption that makes these finer distinctions hard to determine.

Once again, CFRE contends that PNM's AMI proposal is clearly covered by the Act. If the Commission does not agree with this assessment, then CFRE respectfully requests that the Commission provide clarification on what sorts of utility projects would fall under the jurisdiction of the Act. If the Commission finds that no utility projects fall under the jurisdiction of the Act, then CFRE respectfully requests that the Commission clarify why the Act would specifically state

[165] CFRE believes that the public should also have confidence that when they call PNM with a concern about whether they have been charged correctly that the testing procedures followed are the correct procedures. Therefore, in accordance with 17.9.560.13A. NMAC, meter testing procedures should also be certified by a P.E.

that it applies to the publics' *property and safety,* ***utilities****, electrical equipment, structures, et al.,* only to then exempt those very same items from the very same Act.

While the Board may be of assistance to the Commission in clarifying the intent of the exemption, CFRE understands it is the Commission that is generally tasked with regulating the utilities under its jurisdiction[166] and ensuring that **all** applicable laws, including the New Mexico Engineering and Surveying Practices Act, are adhered to by the utility companies.

Before we move on to a related topic, CFRE will address one other argument in PNM's consolidated response. In PNM's response, PNM argues about the word "construction." CFRE asserts that installation of new equipment, some of which is even completely new types of equipment, constitutes the construction of a new system. However, even without focusing on this single factor that could establish the applicability of the Act, the Act is pertinent to, and requires certification for, the "evaluation, planning and design of engineering works and systems, expert technical testimony, . . . in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects and industrial or consumer products or equipment of a mechanical, electrical, . . . or thermal nature, insofar as they involve safeguarding life, health or property, and including such other professional services as may be necessary to the planning, progress and completion of any engineering work." There are plenty of other aspects of PNM's project that require P.E. certification regardless of PNM's insignificant quibble about whether installation equals construction of PNMs proposed new metering system.

[166] 62-6-4 NMSA 1978 provides that the PRC has "general and exclusive power and jurisdiction to regulate and supervise every public utility in respect to its rates and service regulation . . ."

10. CFRE Seeks Clarification on the Commission's Requirement for "Good Engineering Practices"

CFRE addresses this aspect of the PRC's regulations, the Service Standards for Electric Utilities, 17.9.560.13A. NMAC, elsewhere in this brief,[167] so we will limit our discussion here to a respectful request that the Commission clarify what constitutes "good engineering practice in the electric industry." Do the "good engineering practice[s]" referred to in the Service Standards differ from the practices set forth in the Engineering and Surveying Practices Act? If so, how and why do they differ?

> **A. Requirement for good engineering practice.** The electric plant of the utility shall be constructed, *installed, maintained, and operated* in accordance with accepted **good engineering practice in the electric industry** to assure, as far as reasonably possible, continuity of service, uniformity in the quality of service furnished, and the safety of persons and property. (Emphasis added.) (17.9.560.13A. NMAC.)

CFRE believes that it is beyond reasonable for the public to expect that utility companies employ qualified persons, i.e., NM licensed P.E.s, and that one of these persons review and certify, *at a bare minimum*, the previously listed items that involve the public's health and safety and their own private property and structures. CFRE would prefer that the Commission require utilities to hire **independent** P.E.s for said work.[168] This would offer greater safety protection to the public.

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[167] (Please see discussion, Independent P.E. Review of Utility Projects that May Affect the Public's Safety and Property is "Reasonably Possible.")

[168] NMSA 62-6-24 provides: Safety rules and regulations.
The commission shall have the right and is hereby empowered to adopt, promulgate and **enforce such reasonable rules and regulations as may be required to protect users of gas or electricity from damage to their persons or property through the use of defective** gas or **electrical** appliances **or equipment**, or **improper installation thereof**; (Emphasis added.)

11. a. Adherence to ANSI C12.10 Is Necessary to Demonstrate Meter Compatibility With Customer-Owned Socket Boxes

In the summer of 2016, CFRE and PNM began to address the issue of the Itron OpenWay Riva ("IOWR") meters' adherence to the ANSI C12.10 standard. In mid-July 2016,[169] PNM's witness, Ms. Teague, expressed the importance of meter adherence to ANSI C12.10 in the following discovery responses:

> **2-3. L)**
> **WHAT STEPS WILL BE TAKEN TO MAKE CERTAIN THAT MALE PRONGS ON THE NEW METERS WILL CORRECTLY AND EXACTLY MATCH THE FEMALE RECEPTORS INSIDE THE METER-BOX?**
>
> **RESPONDENT: REBECCA TEAGUE**
> **RESPONSE:**
> No steps are necessary as meter and meter socket manufacturers comply with ANSI standards with respect to the dimensions of blades (ANSI C12.10) and socket dimensions (ANSI C12.7) in their manufacturing process, so as to enable installations and replacement of meters over time. Meters and meter sockets, even if they are new, are not manufactured as a "matched set". **As such the industry relies on manufacturing standards to ensure that meters and sockets work together both for initial installation as well as any subsequent replacements.** (Emphasis Added.)
>
> **2-3. N)**
> **WHAT STEPS HAVE BEEN TAKEN TO INSURE COMPATIBILITY OF THE NEW AMI PROGRAM METERS AND EXISTING METER BASE BOXES?**
>
> **RESPONDENT: REBECCA TEAGUE**
> **RESPONSE:**
> Please see PNM's response to CFRE 2-3 (L), above.[170]

Seven months later,[171] when PNM decided to have Mr. Hawkins submit written testimony and for Mr. Hawkins to be available at the first hearing in this AMI proceeding, PNM also amended

[169] The affidavit of Rebecca Teague was signed on July 13th 2016. (CFRE Exhibit 1.)
[170] (CFRE Exhibit 1.)
[171] The affidavit of Jonathan Hawkins was signed on February 15th 2017. (CFRE Exhibit 29.)

its response to 2-3. (L) (and other discovery responses to other intervening parties); PNM added Jonathan Hawkins's name as a respondent to 2-3. (L).[172]

But like Rebecca Teague,[173] Mr. Hawkins is also not a licensed professional engineer[174] and is therefore not qualified to make such a statement and to attest to the statement's accuracy.[175] Ms. Teague is not a NM P.E. and is therefore not qualified to respond to 2-3. (N) or to 2-3 (L) as she did, asserting that **no steps were necessary** to ensure any other aspects of meter and socket compatibility because the meters **allegedly** meet ANSI C12.10 and the sockets meet ANSI C12.7.

The above cited and ongoing assertion by Ms. Teague, Mr. Hawkins, Mr. Larry O'Dell, and, at one time, by Mr. Ortiz,[176] that the meters meet the ANSI C12.10 standard, and therefore, are acceptable for installation in the socket boxes ***that PNM specified*** its customers ***must have*** (ANSI C12.7 compliant boxes), is a determination that by law must be made by qualified persons.[177] The meters' compliance with ANSI C12.10 has not yet been verified in this case

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172 (CFRE Exhibit 29.)

173 (TOP 2/28/17, p. 83, l. 15-18)

174 (TOP 3/1/17, p. 113, l. 12-14.)

175 Neither Ms. Teague nor Mr. Hawkins are professional engineers, nor were they working under the direct charge of a NM P.E. This is in violation of 61-23-2, 61-23-3. O. NMSA 1978 as well as 61-23-21. B. NMSA 1978 (2017), which states the following: "All plans, designs, drawings, specifications or reports that are involved in such practice, or that are issued by or for the practice, shall bear the seal and signature of the professional engineer in responsible charge of and directly responsible for the work issued. . . In the case of practice through a business entity other than a partnership, services or work involving the practice of engineering may be offered through that business entity; provided that the person in responsible charge of the activities of the business entity that constitute engineering practice is a professional engineer who has authority to bind such business entity by contract; and further provided that all plans, designs, drawings, specifications or reports that are involved in engineering practice, or that are issued by or for such business entity, bear the seal and signature of a professional engineer in responsible charge of and directly responsible for the work when issued."

176 More recently Mr. Ortiz hedged his response, clarifying that his testimony about meter adherence to standards was very limited. "To the extent that I was relying upon other witnesses or other conversations, . . . yes, I stand by it." (TOP 10/25/17, p. 94, l. 23, - p. 95, l. 8)

177 "[E]ngineering", "practice of engineering" or "engineering practice" means **any** creative or **engineering work that requires engineering education, training and experience in the application of special knowledge** of the mathematical, physical and engineering sciences to such creative work as consultation, investigation, forensic investigation, **evaluation, planning and design of engineering works and systems, expert technical testimony**, engineering studies and the review of construction for the purpose of assuring substantial compliance with drawings and specifications; any of which embrace such creative work, either public or private, **in connection with any utilities**, **structures, buildings**, machines, **equipment**, processes, **work systems**, projects and industrial or

despite CFRE's considerable attempt to obtain third party verification (i.e., third-party documentation that clearly states that the meters meet the ANSI C12.10 standard). PNM's witnesses repeated the assertion that the Itron OpenWay Riva (IOWR) meters meet ANSI C12.10 multiple times during the next year, including in sworn discovery responses and in sworn testimony.[178] [179]

b. Mr. Ortiz Walked Back his Claim of Meter Adherence to Standards

Although Mr. Ortiz's involvement in the project was *mostly* non-technical in nature, he is the only PNM witness in the case who is acknowledged to be a NM P.E.[180] Mr. Ortiz did weigh in on some technical issues during cross-examination, including the issue of whether or not the meters meet the applicable standards. At the first AMI hearing Mr. Ortiz originally testified conclusively as follows:

> . . . the point that I would make is, the meters that are being installed have met all applicable regulatory requirements by the appropriate governing bodies. They have met the appropriate standards and testing requirements . . .[[181]]

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consumer products or **equipment of a mechanical, electrical**, hydraulic, chemical, pneumatic, environmental or thermal nature, **insofar as they involve safeguarding life, health or property**, and **including such other professional services as may be necessary to the planning, progress and completion of any engineering work**. (Emphasis added.) (H. 61-23-3. NMSA 1978. (2017))

[178] For example, in cross examination by Mr. Manning PNM's witness Mr. O'Dell stated that the meters meet the ANSI C12.10 standard:

Q Do the ITRON IOWR meters meet ANSI C12.10?
A Absolutely.
Q When were they certified to that standard?
A When they were originally designed.
Q Have you provided that documentation to PNM?
A Yes, we have.
Q And is that the correct standard that meters should meet to be put into residential customers' meter boxes?
A C12.10 is one of those standards. (TOP V 3, 3-1-17, p. 164 l. 16–p. 165 l. 9.)

(Also see TOP 10/25/17, p. 126. l. 24 – p. 127, l. 2; et al.)

[179] Mr. Hawkins testified, "[i]ts replacing a meter that meets certain criteria with a new meter that meets the same criteria, the ANSI standards." (TOP V. 3, March 1, 2017, p. 116, l. 19-21.) Also, Mr. Hawkins testified that "The meter that we are replacing is like for like. So it is a 2S meter that meets a current standard and a new 2S meter, for example, that meets the same standard." (TOP V. 3, March 1, 2017, p. 118, l. 24- p. 119 l. 2.)

[180] (Ortiz, Direct, p. 2, l. 1-2, "Registration No 9687" ;TOP 2/27/17, p. 99, l. 19-22.)

[181] (TOP, 2-27-17, p 102, l. 16-21.)

However, *after* providing the above "expert testimony," Mr. Ortiz admitted during further cross-examination, that he made the above statement ***without performing any due diligence*** that would ensure his own statement's accuracy; he admitted that he had not actually reviewed applicable documents:

> Q [Mr. Manning] And you're saying they have met all those standards, but you have not personally reviewed that to know that that's the case; is that correct?
>
> A [Mr. Ortiz] I have not looked at the standards myself. I have read the testimony of other PNM witnesses, and I have also participated in some of the discussions, at least in passing.
>
> Q But you yourself have not reviewed those standards and checked to see if they have been met?
>
> A I have not.[182]

When asked if he [or PNM] is "responsible to check that the standards have been met before [going] forward with a project of this magnitude," Mr. Ortiz replied as follows:

> PNM has meter standards in place for the meter-reading equipment that we buy and we have meter specifications in place. A vendor would have to provide proof that those standards are met. Mr. Hawkins can talk to you about the meter standards that we have in place.[183]

As far as CFRE can discern, no one at PNM bothered to review or confirm that the "proof" Mr. Ortiz refers to above does, in fact, prove that the *relied upon* standards have actually been

[182] (TOP, 2-27-17, p 103, l. 1-10.)
[183] (TOP, 2-27-17, p 105, l. 10-18.)

met.[184] [185] Even after it was pointed out to PNM that the ***Report does not state that the meters actually meet any standards***,[186] PNM continued to defend the meters rather than actually performing unbiased due diligence to determine for itself or to acquire a third party or qualified NM P.E. report that ***actually states*** that the meters meet the standards in question. CFRE has not been able to find any evidence of this sort of due diligence by PNM.

It is noteworthy that Mr. Ortiz, the only N.M. licensed P.E. testifying, was not willing to be as definitive at the third AMI hearing as he had originally been at the first AMI hearing. At the third hearing Mr. Ortiz was careful *at the onset* to disclose that his opinion was based only upon hearsay:

> Q Mr. Ortiz, at the first AMI hearing you testified that the IOWR meters comply with or meet the ANSI C12.10, the ANSI C12.20, and the ANSI C12.1 standards. A lot of time has passed since then. Yes or no, Mr. Ortiz, do you today stand by your testimony that the IOWR meters meet the aforementioned standards?
>
> A I don't recall that testimony specifically. To the extent that I was relying upon other witnesses or other conversations, . . . yes, I stand by it.[[187]]

CFRE finds Mr. Ortiz's statement that he "do[es]n't recall that testimony specifically," very hard to accept as forthright, both for reasons that we are not at liberty to discuss at this time,[188] and because we believe that the careful and upfront disclaimer that Mr. Ortiz used at this later, third AMI hearing, attesting only "[t]o the extent that. . .," reflects Mr. Ortiz's clear recollection of his earlier testimony and greater care to testify *at the onset* that his following statement would

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[184] Mr. Hawkins *previously* testified that he had not reviewed the certification page of the *first* MET Labs report that PNM provided to CFRE (TOP V. 3, March 1, 2017, p. 114, l. 17-19), even though he attested to the meters' adherence to applicable standards in that time-frame. Mr. Hawkins further testified that, to the best of his knowledge, neither he nor anyone at PNM had read the MET Labs report or any Itron review of the Met Labs report (TOP V. 3, March 1, 2017, p. 115, l. 5-11).

[185] (TOP, 10-26-17, p 137, l. 21-24.)

[186] (CFRE Exhibit 36, p. 3, CFRE Interrogatory 9-1.)

[187] (TOP 10/25/17, p. 94, l. 23, - p. 95, l. 8)

[188] (CFRE believes that documents which will someday be publicly available will demonstrate that Mr. Ortiz's claimed memory lapse was disingenuous.)

be based *only* upon hearsay. However, CFRE expects more of a NM licensed professional engineer,[189] we would expect that a NM P.E., especially one in charge of the regulatory affairs of PNM, would understand and would act to ensure compliance[190] to the New Mexico Engineering Practices Act[191] as well as the "good engineering practice[s]" required by the Service Standards for Electric Utilities.[192] CFRE would also hope that the issue of meter adherence to standards would receive a testament (and certification), free of disclaimers, from at least one licensed NM P.E.

12. a. NOWHERE in the MET Labs Test Report Does It State that the IOWR Meters Meet *Any* ANSI Standards

On March 30, 2017, after the closure of the second AMI hearing, PNM supplied the parties in the case with a supplemental response to CFRE 4-4. PNM supplied the March 21, 2017 MET Labs Test Report ("Report"). Despite the fact that the Report was supplied in response to a request for documentation that the IOWR meters meet ANSI C12.10,[193] the Report clearly states on the front "Tested under ANSI C12.1 [and] ANSI C12.20." The Report does not even list the ANSI C12.10 standard.[194] Yet, disturbingly, Mr. O'Dell could not point to anywhere in the 413 total pages of the MET Labs Test Report[195] where it states that the meters meet the ANSI C12.20, the ANSI C12.1 standard, or the ANSI C12.10 standard (for which the report was provided to

[189] 16.39.8.9 A.(1)(f), NMAC, 2015 states in pertinent part: "(f) Inform the board of any violation of this code. Cooperate with the board in furnishing information or assistance as may be requested by the board in matters concerning violations." 16.39.8.9 A.(1)(g), NMAC, 2015 states in pertinent part: "(g) Shall not assist or participate in the unlawful practice of engineering and surveying by a person or firm."

[190] CFRE notes that Mr. Ortiz failed to "[i]nform the board of any violation of this code,"16.39.8.9 A.(1)(f), and he acted in violation of 16.39.8.9 A.(1)(g) which states that a P.E. "[s]hall not assist or participate in the unlawful practice of engineering and surveying by a person or firm."

[191] (61-23-1 et seq. NMSA 1978)

[192] (17.9.560.1 et seq. NMAC)

[193] CFRE Exhibit 14, see 4-4.

[194] CFRE Exhibit 36 p. 9 (i of xlix [sic.]).

[195] PNM Exhibit 34

CFRE.)[196] No PNM witness has ever shown that the Report **actually states** that the meters meet ***any*** of the standards that PNM and Itron repeatedly assert the Report demonstrates compliance with.

b. Itron Finally Admits that "You Don't Test for C12.10" You Take Measurements

PNM witnesses have been clearly and unequivocally claiming that the IOWR meters meet the ANSI C12.10 standard.[197] However, their explanation as to how the Report demonstrates C12.10 compliance has been convoluted and inaccurate.[198]

Mr. O'Dell stated that he had given documentation to PNM that the meters meet the ANSI C12.10 standard.[199] However, seven months later and after repeated inquiries by CFRE, at the October 2017 hearing, Itron's Mr. O'Dell, **finally acknowledged** that more is needed to ensure meter compliance to ANSI C12.10 then what PNM had provided in response to CFRE 4-4. (the Met Labs Report); among other things, measurements must be taken:

> Q Can you please tell us what pages in the report show the measurements that MET Labs took to demonstrate compliance with the ANSI C12.10 standards?
>
> A I cannot.
>
> Q Why not?
>
> A I didn't say MET Labs made those measurements.
>
> Q Are you saying that MET Labs did not make those measurements?

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[196] "Q Can you show me anywhere in the report where it states that the meters meet the ANSI C12.10, the ANSI C12.20 or the ANSI C12.1 standards?
A I cannot." (TOP 10/25/17, p. 132, l. 20-23.)

[197] (TOP V 3, 3-1-17, p. 164 l. 16–p. 165 l. 9; TOP 10/25/17, p. 126. l. 24 – p. 127, l. 2; TOP, 2-27-17, p 102, l. 16-21; etc.)

[198] For example, see TOP 10/26/17, p. 135, l. 13- p. 136., l. 1. Note that Mr. Hawkins almost said that the meters comply with the standards, but he corrected himself from saying "comply with the ANSI . . ." by saying "with all applicable ANSI. . ." Is this a disclaimer that the meters do not meet the standards? His answer is convoluted and unclear.

[199] Q Have you provided that documentation to PNM?
A Yes, we have. (TOP ***3-1-17***, p. 164 l. 16–p. 165 l. 9.)

A I'm saying I don't know whether MET Labs made those measurements or not.

Q If you don't know whether they made those measurements, then how do you know that the report demonstrates compliance with that standard?

A Because the report says that it meets 12.20. C12.20 refers to C12.10.

Q So your contention is they don't need to actually take measurements to see if it meets the C12.10 standard to know that it meets the C12.10 standard?

A I know that Itron has made the measurements. Itron can supply our documents and our design documents that meet these standards for C12.10. I don't know whether MET Labs made those measurements or not.

Q So they're not in that test report that's in front of you?

A Again, you don't test for C12.10.[200]

Let's look at some of the various aspects of this exchange. When asked, "[i]f you don't know whether they made those measurements, then how do you know that the report demonstrates compliance with that standard?" Mr. O'Dell replied "Because the report says that it meets C12.20. C12.20 refers to C12.10."[201] CFRE notes, once again, that Mr. O'Dell could not show anywhere in the report where it "says" ("states") that the meters meet ANSI C12.20 (or C12.1, or C12.10).[202] Mr. O'Dell answered the next question indirectly:

Q So your contention is they don't need to actually take measurements to see if it meets the C12.10 standard to know that it meets the C12.10 standard?

A I know that Itron has made the measurements. **Itron can supply our documents and our design documents that meet these standards for C12.10.** I don't know whether MET Labs made those measurements or not.[203] [Emphasis Added]

[200] (TOP 10/25/17 p. 135, l. 13– p. 136, l. 16.)
[201] (TOP 10/25/17, pp. 135 l. 25-136, l. 4.)
[202] (TOP 10/25/17, p. 132, l. 20-23.)
[203] (TOP 10/25/17, p. 136, l. 5-13.)

Despite PNM witnesses' repeated assertions that the Report demonstrated that the meters meet the ANSI C12.10 standard, Mr. O'Dell admitted that he did not know whether MET Labs had made the measurements necessary to demonstrate compliance to the ANSI C12.10 standard.[204] Despite CFRE's persistent attempt to receive documentation, there are no documents in the case record that demonstrate compliance to ANSI C12.10.[205]

The above interaction concludes with Mr. O'Dell clearly confirming that "Again, you don't test for C12.10." So, if one doesn't test for C12.10, but one does take measurements for 12.10, why would PNM and Itron supply CFRE with a "Test Report" for standards other than C12.10 to supposedly demonstrate compliance with C12.10? Why would PNM, for over half a year, not admit that one needs to take measurements to determine that the meters meet C12.10 and that the measurements are not in the Report? Why would PNM and Itron not at least offer the documents sooner in response to CFRE's request for documentation confirming adherence to C12.10?[206] Why didn't PNM demonstrate compliance with ANSI C12.10 if the meters do, in fact, meet C12.10?

Despite CFRE's prolonged and persistent attempts to confirm C12.10 adherence, no documentation of the actual measurements or of C12.10 adherence has been put into the case record or supplied to interested parties by Itron or PNM. Unfortunately, PNM and Itron had not offered Itron's internal documentation for CFRE to review earlier.[207] CFRE is not implying that PNM *necessarily,* needed to offer this documentation earlier since CFRE interrogatory 4-4. had

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[204] (TOP 10/25/17, p. 136, l. 12-13.) "I don't know whether MET Labs made those measurements or not."

[205] CFRE emailed PNM on 11/5/17 in an attempt to pick Mr. O'Dell up on his offer. On 11/7/17, PNM responded that "PNM will not provide the documents because the record in Case No. 15-00312-UT is closed."

[206] If the Report was intended to demonstrate compliance with C12.10, then the following portion of the Engineering Statement would be blatantly incorrect: "I assume full responsibility for the accuracy and **completeness** of these measurements. . ." (See the Engineering Statement, PNM Exhibit 34 p. ii of xix.) The measurements in the Report are not the measurements necessary to demonstrate compliance to C12.10. The Report is not intended to demonstrate compliance with C12.10.

[207] CFRE would not have considered Itron's internal documentation conclusive without further corroboration, but it would have been a start. Just like PNM, Itron has a lot of money riding on this case, which is why third-party certification by a NM P.E. is necessary to try to ensure an unbiased evaluation.

specifically requested that PNM "[p]lease produce the **third-party or PNM prepared certification** that demonstrates that the Itron OpenWay Riva ("IOWR") meter meets ANSI C12.10 standards."[208] (Emphasis added.) Itron's internal documentation, measurements and design documents, do not strictly fall under this request. However, in response to CFRE 4-5., a request with similar wording, PNM did provide an internal Itron report.[209] CFRE is left to wonder why PNM and Itron treated these two requests differently, apparently being willing to produce internal Itron documents in response to 4-5, but not in response to 4-4, even though the requests were worded similarly?

c. PNM's Expert Witnesses Do Not Know If Customer's Socket Boxes Were Tested to Ensure that They Are Safe with A Meter with A Remote Service Switch

Another example that PNM and Itron have not demonstrated that adequate steps were taken in order to ensure meter and socket compatibility is exemplified by the following exchange in cross-examination by Mr. Manning:

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[208] (CFRE Exhibit 14.)

[209] The interrogatory and response are as follows:

> **CFRE INTERROGATORY 4-5.**
> **JON HAWKINS**
> **PLEASE PRODUCE THE THIRD-PARTY OR PNM PREPARED ENGINEERING REPORT AND CERTIFICATION OF THE REMOTE DISCONNECT SWITCH IN THE IOWR METER.**
> **RESPONSE:**
> Please see PNM Exhibit CFRE 4-5(A) for an engineering report from Itron. Please also see PNM Exhibit CFRE 4-5(B) which shows certification to UL 2735. (CFRE Exhibit 14.)

CFRE notes that the document itself, PNM Exhibit CFRE 4-5(A), an "engineering report from Itron," is not in the case record as these discovery responses had been accepted originally as Admissions of a Party Opponent at the time of the response testimony, and CFRE did not see the need to admit the documents simply because they had been mentioned in the interrogatory response. Making CFRE's former AOPO exhibits "complete" was left up to PNM at the first AMI hearing. (3/2/17, p.119, l. 7-p. 120, l. 13.) When left up to PNM, having exhibits be "complete" was apparently not really necessary, because PNM did not bother to complete ***any*** of the exhibits at the March 30, 2017 hearing. However, CFRE making sure exhibits were complete was important enough to PNM that CFRE had to actually complete all other exhibits prior to admission. (exhibits offered and objected to because they were not "complete" 3/28/17, p. 91, l. 17-p. 92, l.11; 3/28/17, p.98, l. 10-19; completed exhibits were admitted on 3/30/17, TOP, p. 203, l. 9-13 et seq.)

Q "Were the meter sockets specified by PNM for its customers tested by a nationally recognized testing laboratory to withstand the forces and torque of the service switch operation?"

A [by Mr. O'Dell] "I don't know."[210]

The above question and response were echoed by Mr. Hawkins.[211] Although Mr. O'Dell and Mr. Hawkins assert the service switch does not render the IOWR meter non-compliant with the ANSI C12.10 standard,[212] PNM has not presented any third-party corroboration that the meters can meet the ANSI C12.10 standard if they contain non-standard parts (parts that are not contained in the standard or shown on the wiring diagram in the standard).

In the following exchange, Mr. Hawkins testified that the ANSI C12.10 standard covers the mechanical properties of the meter:

Q What is the purpose of the ANSI C12.10 standard?

A It is for the mechanical properties of the meter.[213]

Mr. O'Dell testified similarly as follows:

A ANSI C12.10 does not have a test plan. It is a mechanical requirements standard.[214]

If Mr. Hawkins and Mr. O'Dell's above testimonies are reliable, then certainly the C12.10 standard should cover the remote disconnect switch, because **the switch is a mechanical property of the meter.** However, Mr. O'Dell testified that the service switch is not in the ANSI C12.10 standard "in any manner."[215] Mr. Hawkins ***refused to acknowledge*** that the meters have non-

210 (TOP 10/25/17, p. 138, l. 2-6.)
211 (TOP 10/26/17, p. 144, l. 10-14.)
212 (TOP 10/25/17, p. 137, l. 10-13.)
213 (TOP 3/1/2017, p. 125, l. 8-11.)
214 (TOP 10/25/17, p. 134, l. 8-9.)
215 (TOP 10/25/17, p. 136, l. 19- p. 137, l. 9.)

standard parts,[216] even though parts contained in the IOWR meter, such as the service switch and the heat sensor-alarm, ***are not in the standard***. The IOWR meters contain parts that are not in the standard; so what standard are they covered by? How do we know that customers' socket boxes are suitable for meters with these non-standard parts? In the following statement, Mr. O'Dell may have offered some insight into where in the ANSI standards the testing for the service switch is:

> The mechanical requirements of meeting C12.10 are implied in the C12.20 and the C12.1 standards.[[217]]

How does one **imply** ANSI compliance testing of a mechanical part, such as a service switch? CFRE has been led to understand that ANSI C12.10 covered the mechanical parts of the meters. Clearly there is some inconsistency here.

Could some of the inconsistencies have something to do with Itron's and PNM's financial motivation to pursue this project? CFRE contends that the financial motivation is hampering candor on many matters covered in the testimonies of all of PNM witnesses including the above and the below listed inconsistencies. CFRE does not believe that PNM and Itron can provide an objective, and therefore, reliable expert to testify on the meters' adherence to ANSI standards. Luckily for PNM's customers, the NM Engineering and Surveying Practices Act contains some explicit mandates in order to ensure that CFRE's and the public's confidence in the safety aspects of PNM's proposal are taken more seriously than they have been to date:

> **61-23-2. DECLARATION OF POLICY**.
> The legislature declares that **it is a matter of public safety**, interest and concern that the practices of engineering and surveying merit and **receive the confidence of the public** and that only qualified persons be permitted to engage in the practices of engineering and surveying. In order to safeguard life, health and property and to promote the public welfare, **any person** in either public or private capacity **practicing or offering to practice**

[216] (TOP 10/26/17, p. 136, l. 22- 25, then further discussion – p. 137, l. 24.)
[217] (TOP p.135, l. 10-12.)

engineering or surveying shall be required to submit evidence that the person is qualified to so practice and shall be licensed as provided in the Engineering and Surveying Practice Act.

13. According to The Standards, The IOWR Meters Were Not Tested Correctly

a. The ANSI C12.20 Standard Specifies that Non-Blondel Meters are to be Tested Under ANSI C12.1, Yet the Report Demonstrates That They Were Tested Under C12.20

Do we trust that the standards themselves are the authority on how the meters should be tested in order to demonstrate compliance to the standards, or do we accept Mr. O'Dell's and Mr. Hawkins's claims that the specifications within the standards can be disregarded and compliance still demonstrated?

Mr. O'Dell confirmed that Test 20, Effects of Temporary Overloads, is an ANSI C12.20 test.[218] Mr. O'Dell confirmed that Test 20 ". . . does not apply to non-Blondel meters. . ."[219] Mr. O'Dell confirmed that "[t]he 2S meter is not in the C12.20 standard."[220] Mr. O'Dell confirmed that form 2S meters need to be tested under ANSI C12.1:

> Q [By Mr. Manning] So the form 2S meters need to be measured –need to be tested under ANSI C12.1. Is that what you just said?
>
> A That's what I said.[221]

Mr. O'Dell was very clear that the form 2S meters "need to be tested under ANSI C12.1." However, *after* Mr. Manning pointed out to Mr. O'Dell that the Report showed that the form 2S meter was tested under the C12.20 standard in plot 3,[222] Mr. O'Dell changed his story and testified

[218] TOP 10/25/17, p. 140, l. 14-19.
[219] TOP 10/25/17, p. 141, l. 15.
[220] TOP 10/25/17, p. 142, l. 18-19.
[221] TOP 10/25/17, p. 141, l. 17-20.
[222] TOP 10/25/17, p, 141, l. 21-24.

that it did not matter that the C12.20 standard called for the meters to be tested under C12.1. According to Mr. O'Dell, *at this later point in his testimony*, the meters could be tested under either standard because they are ". . . the same test."[223] Mr. Manning then pointed out that the meters were tested under C12.20 on plots 2, 5, and 6 as well.[224] Mr. O'Dell claimed that it did not matter, according to him this simply meant that the meters were more accurate.[225] [226] [227]

Mr. O'Dell's testimony raises several questions about the limitations of the C12.20 test. By saying that it doesn't matter which ANSI standard the meters are tested under, is Mr. O'Dell claiming that the IOWR meter will measure imbalanced currents accurately enough to be tested under ANSI C12.20? ***Why does the ANSI C12.20 standard specifically state to use ANSI C12.1 for non-Blondel meters***[228] if it does not make a difference which standard you use? Do form 2S meters meet all the design characteristics that make it acceptable to use the ANSI C12.20 standard?

b. When Asked About Test 15, Mr. O'Dell Makes MORE Inconsistent Statements

Mr. Manning requested that Mr. O'Dell refer to page 97 of the Report and look at table 71, test 15, insulation, form 12S meter.[229] ***After referring to the standard***,[230] presumably in order to ensure that he gave a correct, a reliable response, Mr. O'Dell confirmed that phase A to phase B

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[223] (TOP 10/25/17, p. 142, l. 18-19.)_
[224] (TOP 10/25/17, p. 142, l. 23- p. 143 l. 2.)
[225] (TOP 10/25/17, p. 143, l. 3- 10.)
[226] The following link downloads a PDF that addresses aspects Blondel vs. non-Blondel meters: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwi88MOSi_HXAhUU8mMKHdGUApYQFggtMAE&url=http%3A%2F%2Fwww.powermeasurements.com%2Flibrary%2FPresentations%2FNCMS%25202013%2520-%2520Non-Blondel%2520Metering.pdf&usg=AOvVaw050lwMoH7C-nOArB464uvW
[227] Blondel's Theorem has to do with how to measure electricity for accuracy. ANSI C12.20 would not specifically state to use C12.1 for non-Blondel meters if using C12.20, was just fine and simply demonstrated that the meters were more accurate.
[228] (TOP 10/25/17, p. 142, l. 8-19.)
[229] (TOP 10/25/17, p. 143, l. 15-17.)
[230] (TOP 10/25/17, p. 144, l. 4.)

should have been tested;[231] however, it was not shown in the Report.[232] Mr. O'Dell confirmed that the Report did not demonstrate that MET Labs' testing conformed to the standard.[233] However, he chose not to confirm the potential consequences of improper testing.[234]

Mr. Manning then requested that Mr. O'Dell refer to p. 98 and look at table 72, insulation, form 1S meter.[235] After confirming what the report showed,[236] Mr. Manning asked if that was the way the test was "supposed to be performed?"[237] Mr. O'Dell testified that that is *not* the way that the test is supposed to be performed.[238]

Mr. Manning then requested that Mr. O'Dell refer to p. 99 of the Report and look at table 73, test 15, insulation, for the form 2S meter.[239] Mr. O'Dell confirmed that the Report did not show phase to phase.[240] But this time Mr. O'Dell articulated a reason why phase-to-phase might not have been tested.[241] Then he indicated that he would "need to go back and look."[242] Mr. O'Dell then claimed that the other Test 15 tests that he had previously testified had been done incorrectly were in fact done correctly.[243]

CFRE believes that Mr. O'Dell's testimony should have been reliable the first time that **he checked the standard** and testified accordingly. But later in his testimony, Mr. O'Dell supposedly checked the standard and found ***different*** requirements. Did the standard change between the first

[231] TOP 10/25/17, p. 144, l. 8-11.)
[232] (TOP 10/25/17, p. 144, l. 14.)
[233] (TOP 10/25/17, p. 145, l. 8-11.)
[234] (TOP 10/25/17, p. 145, l. 13-15.)
[235] (TOP 10/25/17, p. 145, l. 16-18.)
[236] (TOP 10/25/17, p. 145, l. 24-25.)
[237] (TOP 10/25/17, p. 146, l. 1-2.)
[238] (TOP 10/25/17, p. 146, l. 3.)
[239] (TOP 10/25/17, p. 146, l. 11-12.)
[240] (TOP 10/25/17, p. 146, l. 18-19.)
[241] (TOP 10/25/17, p. 146, l. 19-24.)
[242] (TOP 10/25/17, p. 146, l. 19 and p. 147, l. 8).
[243] (TOP 10/25/17, p. 147, l. 10-19.)

time (on Test 15) that Mr. O'Dell checked it, and the second time (on Test 15) that Mr. O'Dell checked it? CFRE contends that Mr. O'Dell's testimony is simply not reliable.[244]

c. More Test 20 Discrepancies

Mr. Manning requested that Mr. O'Dell turn to page 154 of the report to look at table 113, Test 20, temporary overloads.[245] Since Mr. Manning asked a compound question, the verbal testimony is unclear about whether or not the page referred to demonstrates that the Report, once again, shows form 2S meters listed under the ANSI C12.20, Test 20; therefore, we will look to the Report for clarification below.[246] However, Mr. O'Dell's response seems to reiterate his claim that, ***contrary*** *to what the C12.20 standard itself states*, form 2S meters may be tested under C12.20.[247]

In order to clarify the above-mentioned ambiguity, CFRE refers to page 154 of the Report (PNM Exhibit 34). In bold on the page it lists "**Table 113. Test No. 20: Effect of Temporary Overloads, 5.5.5.7.2, Form 2S** . . ." Earlier in this brief, while addressing Test 20, it was made clear that testing the meters under this ANSI C12.20 test is in contradiction to the directive of the ANSI C12.20 standard. According to the ANSI C12.20 standard itself, form 2S meters ***must*** be tested under ANSI C12.1.[248] Therefore, page 154 shows more testing performed under the incorrect standard.

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[244] And neither is Mr. Hawkins's testimony reliable, among other reasons, because Mr. Hawkins relies upon Mr. O'Dell. "Mr. O'Dell would know the standard probably better than I would. . ." (TOP 10/26/17 p. 137, l. 21-24.)
[245] (TOP 10/25/17, p. 147, l. 20-22.)
[246] (TOP 10/25/17, p. 147, l. 20-p. 148, l. 1.)
[247] (TOP 10/25/17, p. 148, l. 2.)
[248] (TOP 10/25/17, p. 141, l. 17-20, and p. 142, l. 8-19.)

d. Mr. Jerman's Cross-Examination of Mr. O'Dell

Upon cross-examination by Mr. Jerman, Mr. O'Dell reiterated his explanation about his contradiction during cross-examination by Mr. Manning about Test 15. Mr. O'Dell said, "I got confused,"[249] he then proceeded with further explanation about the need to disassemble the meter to perform that test.[250] CFRE again points out that Mr. O'Dell ***had specifically indicated that he was looking it up in the standards prior to giving his initial response on Test 15***.[251] Just as he had contradicted himself with regards to non-Blondel meter testing protocols (Test 20), Mr. O'Dell's later testimony on Test 15 contradicts his initial testimony that was given after supposedly checking the standard in order to give an accurate answer.

CFRE would like to point out that Test 15 and Test 20 were the focus of the revisions that led to the March 21, 2017 MET Labs Test Report.[252] During cross examination by Mr. Manning, Mr. Odell read his response to CFRE Interrogatory 10-17 detailing the instructions given by Itron to MET Labs in order to address the errors that CFRE had first brought to Itron's attention which read as follows:

> 'Itron informed MET Labs that it did not follow the test plan in two respects, ***Itron pointed out the discrepancy between how MET Labs performed 5.5.5.7, effect [of] temporary overloads*** **test, number 20,** ***and how the standard states it should be conducted***. Itron also pointed out the discrepancy in how MET Labs performed 5.5.5.2 insulation **test number 15** and instructed MET Labs personnel on how to properly isolate the electronics during the insulation testing.'[253] (Emphasis added.)

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249 (TOP 10/25/17, p. 158, l. 14.)

250 CFRE notes that when performing scientific tests, one would run the test once to get a baseline result. Then one would apply to the subject (ex. wire) the variable that is being tested for (ex. overload). Then the same initial test is performed in order to identify if the variable affected the results. This is commonly known as an "experiment," part of the "the scientific method." If you introduce multiple variables, or do not perform the same test both before and after introducing the variable, you cannot properly test to find the results of the variable upon the subject which is being tested. Therefore, in Mr. O'Dell's explanation, he is simply acknowledging that Itron designed its meter in way that prevents Test 15 from being properly performed.

251 (TOP 10/25/17, p. 144, l. 4-11.)

252 (CFRE Exhibit 32, p. 3, See Objection/Response to CFRE Interrogatory 10-16 and 10-17.)

253 (TOP 10/25/17, p. 149, l. 25 – p. 150, l. 9.) Also in CFRE Exhibit 32.

In the above response Mr. O'Dell claimed that "Itron pointed out the discrepancy between how MET Labs performed 5.5.5.7, effect [of] temporary overloads *test, number 20*, and how the standard states it should be conducted." Here Itron is ***again*** acknowledging that the **test was not performed as the standard specifies**, and Itron states that they informed Met Labs "that it did not follow the test plan." Itron further claims that it "instructed MET Labs personnel on how to properly isolate the electronics during the insulation testing" on Test 15. We now know that this is not possible because the meter must be "disassembled" in order to access the wires. Thus, the before and after tests, ***which should be the same test***, cannot be performed on an intact meter to determine that the meter meets the standard.[254]

Despite Mr. O'Dell having read this above response detailing test corrections that needed to be made in test numbers 15 and 20, and despite CFRE bringing up further testing discrepancies in tests 15 and 20 during cross-examination, Mr. O'Dell claimed that he could not remember the number of one of the tests and didn't mention the number of the other test while being cross-examined by Mr. Jerman.[255] Perhaps Mr. O'Dell and Mr. Jerman just didn't want to spotlight the fact that they were again talking about (that there are still inconsistencies with) portions of Test 15 and Test 20, the same tests that Itron had instructed MET Labs to re-perform portions of.

In his response to CFRE Interrogatory 10-17, Mr. O'Dell acknowledged that Itron had followed up on discrepancies with portions of Test 15 and Test 20 earlier in this proceeding, prior to the release of the March 21, 2017, revised report. Is it just happenstance that there are still inconsistencies with tests 15 and 20; or might there be something deeper going on here? Luckily

[254] (TOP 10/25/17, p. 158, l. 14-p. 159, l. 4.)
[255] (TOP 10/25/17, p. 159, l. 16 17.)

for the public and PNM's customers, according to NM state law, a licensed NM P.E. must examine this situation and certify the project ***prior to consideration*** of any AMI system deployment.[256]

Perhaps the above-mentioned inconsistencies will get addressed if and when PNM ever fulfills its prima facie due diligence responsibilities. These should include submission of a NM P.E. certified report addressing technical issues including standards adherence (or lack thereof) and other engineering matters (for example, completion of a coordination study). Only after such a report is filed can intervenors and PRC Staff enlist their respective P.E. experts to examine and address the engineering aspects of PNM's direct case.

14. Engineers Needed

It is important to note that the engineering issues that CFRE has been addressing in this case involve a highly specialized field of expertise, one that quite frankly CFRE does not have the resources to fully explore. And, CFRE asserts that an *association of residential ratepayers* of PNM's (a group of concerned customers), should not need to be relied upon to bring issues of technical engineering concern to the Commission's attention. Nonetheless, we believe that we have managed to scratch the surface of some significant engineering deficiencies (as well as some legal flaws) of PNM's AMI application and proposal. CFRE contends that PRC Staff should have the technical expertise to review utility proposals and projects. Yet, Staff has acknowledged that they have do not have such capabilities. In a response to CFRE Interrogatory 1-2 to PRC Staff, Staff acknowledged the following:[257]

[256] As per 1.2.2.35 K. NMAC, the parties must be afforded the opportunity to reply to such evidence and cross-examine such witnesses under oath.

[257] (CFRE Exhibit 30)

> No, **Staff does not have a NM licensed professional electrical engineer with sufficient training, experience and knowledge to evaluate whether PNM has performed the necessary engineering analysis to ensure the utility-owned meter and utility-specified customer-owned meter sockets are safe as an assembly**. Also, the NMPRC has no facilities or intrinsic ability to perform any manner of verification of any claims made by the manufacturer or by PNM that these meter sockets and meters are safe as an assembly and, hence, Staff would **unacceptably** be required to accept PNM or manufacturer assurances that these meters and meter sockets are safe as an assembly. [Emphasis added.]

CFRE appreciates Staff's candor; we believe that it potentially demonstrates a desire on Staff's part to confront the aforementioned "unacceptab[ility]." However, Staff's deferral (as demonstrated in the interrogatory responses that we will discuss below) to other parties as being responsible to address engineering considerations indicates a potential attempt to abdicate any responsibility of Staff to have the expertise necessary to weigh in on even basic questions of engineering concern. CFRE finds this deeply troubling.

CFRE was alarmed by Staff's above quoted admission that they have no "manner of verification of any claims made by the manufacturer or by PNM that these meter sockets and meters are safe as an assembly." CFRE is also alarmed that there is no one on Staff with sufficient expertise to recognize the importance of ensuring ANSI C12.10 compliance of the meters; CFRE is very concerned that there is no one on Staff with sufficient training to list, in Staff's response to CFRE 1-7, any acknowledgement that ANSI C12.10 is pertinent to the safety of meters and necessary in order to determine compatibility with customer owned ANSI C12.7 compliant socket boxes.[258]

CFRE is extremely concerned that there is no one on Staff with sufficient expertise to ensure that the MET Labs Report, at a bare minimum, actually states that the meters meet the

[258] (See CFRE Exhibit 30, Staff's response to Interrogatory 1-7, Staff fails to mention the applicable C12-10 standard.)

standards that the meters were tested under and that those are all of the applicable ANSI standards. CFRE is distressed because there is no one on Staff with sufficient training to know whether adherence to ANSI C12.20 or ANSI C12.1 is sufficient to determine adherence to ANSI C12.10, and to weigh in on the basic engineering issues upon which Commission decisions will be based.

With respect, CFRE agrees with Staff's characterization that it is "unacceptabl[e]" that the NM PRC Staff would "be required to accept PNM or manufacturer assurances that the meters and sockets are safe as an assembly." CFRE asserts that ***it is even more unacceptable*** that PNM's customers and the general public would have to rely upon PNM[259] or manufacturer assurance for all the other engineering aspects of the design and implementation of a new electric utility metering system **including components installed on customers' structures and on customers' property**.

CFRE believes that there is a considerable deficiency in the regulatory process when PRC Staff do not have sufficient expertise to review or weigh in on these sorts of technical matters. In this case they did not remedy the situation when it was brought to their attention; Staff has remained absent from the engineering discussions in the instant case. CFRE views the revelation of the significant lack of engineering expertise of Staff as a severe problem in need of the Commission's attention.

Staff's response to CFRE 1-2 continued as follows:

> Further, the meter sockets (and hence the meters installed in them) are installed as part of the facility wiring as customer-owned equipment and **thus fall under the purview of the National Electrical Code which falls under the jurisdiction of the Construction**

[259] PNM has stated repeatedly that it is relying upon the manufacturer for expert review, (TOP 3/1/17 p. 115, l. 5-25; TOP 3/1/17 p. 117, l. 22-p. 118, l. 2.) but the manufacturer is not responsible to provide project oversight. Furthermore, CFRE revealed that the manufacturer had not even ensured that MET Labs performed all tests correctly (Simmons Direct, et al.). Because of our review and disclosures MET Labs revised its Report. This demonstrates a lack of adequate P.E. oversight and review by the manufacturer of MET Labs testing protocols. PNM declined to provide a certification seal of a licensed N.M. professional engineer to ensure public safety, because they "don't believe it's required" (TOP 3/1/17 p. 117, l. 5-21.)

Industries Division under the Regulation and Licensing Department in New Mexico. Specifically, Section 90.7 of the National Electrical Code deals with "Examination of Equipment for Safety". . . [260] (Emphasis added.)

Staff proceeded to quote Section 90.7. However, Staff's assertion that Section 90.7 specifically applies is incorrect. Section 90.7 applies to "factory-installed internal wiring," and so, while it would cover the meters themselves, it would not apply to the meters and sockets as a combination because they are not a "factory-installed" assembly. Furthermore, if Staff is correct in their conclusion to 1-2, that Staff "believes that MET Laboratories, Inc., and certainly UL, meet the requirements of this section of the Construction Industries Division,"[261] it does not negate the responsibility of PNM and Staff to ensure that there is proper documentation that applicable standards have, in fact, been met, and that PNM's AMI proposal has received the requisite P.E. certification.

Kelly Hunt of the NM Construction Industry Division's (CID) testimony was inconsistent with Staff's above quoted assertion that "the meter sockets (and hence the meters installed in them). . . fall[] under the jurisdiction of the Construction Industries Division under the Regulation and Licensing Department in New Mexico." Mr. Hunt testified that if PNM self-performed the meter swap then CID "would not have a dog in the fight, . . . because they're under PRC designation."[262] "However, if PNM chooses to hire a licensed New Mexico contractor to do that work," then CID would have the limited involvement of "ensur[ing] that that company is currently licensed in New Mexico. . . No permit or inspection [] would be required, since the end user is the public utility."[263]

[260] (CFRE Exhibit 30.)
[261] (CFRE Exhibit 30.)
[262] (TOP 3/30/17, p. 131, l. 7-14.)
[263] (TOP 3/30/17, p. 131, l. 15- p. 132, l. 2.)

Staff's response to CFRE's Interrogatories 1-4 and 1-6 takes a somewhat different stance than Staff's above quoted response to 1-2. In response to 1-4 and 1-6 Staff states as follows:

> Since the meter boxes are installed as part of the residential wiring installation, they would be covered under the National Electric Code and be under the jurisdiction of the Construction Industries Division of Regulation and Licensing Department. It is PNM's responsibility to ensure that all their installations are compliant with all codes and standards and are done in a safe manner and to provide whatever PE certifications that the NM Board of Professional Engineers and Surveyors ["Board"] deems apply to them.

When just comparing Staff's response to 1-2 and Mr. Hunt's responses at the hearing, it looked as if each were pointing at the other, saying that meter/socket compatibility or the meters themselves are under the other's jurisdiction. But Staff's response to 1-4 and 1-6 also points to PNM and the Board as being the responsible parties, stating that "[i]t is PNM's responsibility . . . to provide whatever certifications that the NM Board of Professional Engineers and Surveyors deems apply to them." CFRE believes that the New Mexico Public Regulation Commission has **the largest role** in ensuring that PNM adheres to **all** of the laws that govern utility companies in the state of NM;[264] that includes ensuring adherence to the Engineering and Surveying Practices Act. CFRE contends that Staff has a role toward this end, as does the Commission.

15. Meter Review Prior to Resumption of Testing and Meter Replacements

CFRE notes that the legal requirements necessitating engineering review and the need to adhere to safety standards, issues that CFRE has argued in this brief, are relevant whether or not AMI is pursued. PNM has been granted a variance of its meter testing and meter replacements

[264] (62-6-4. NMSA 1978 (2006).) "The commission shall have general and exclusive power and jurisdiction to regulate and supervise every public utility in respect to its rates and service regulations. . ."

pending the outcome of this AMI case.[265] CFRE urges the Commission to order PNM to adhere to NM statutes, and to perform the requisite engineering analysis and certification by a licensed NM P.E. of whatever meters it eventually installs into customer-owned socket boxes. CFRE urges the Commission to allow customers who want to utilize electro-mechanical (analog) meters to do so **at no additional cost**. Though not scrutinized and documented adequately in the instant case, analog meters can meet the ANSI C12.10 standard that PNM has stated it relies upon to ensure compatibility with customer owned meter boxes.[266]

Meter boxes are often located on customers' structures. At this time, it does not appear to CFRE that PNM adequately analyzed, through a coordination study, the potential necessary fuse replacements (on the transformers) for adequate protection of solid-state meters of any kind, AMI or other, as PNM began to make a transition from electro-mechanical to solid-state meters. There is nothing in the case record to demonstrate that PNM performed a coordination study, in fact, Mr. Hawkins seems not to understand that this is applicable and necessary to ensure that the fuses on the transformers are of the correct specifications to protect the meters:

> A coordination study is not applicable because the meter is not a protective device itself. It's not a circuit breaker or a fuse, something that would open.[267] So it doesn't coordinate with a fuse either upstream or downstream.[268]

Mr. Hawkins testified that the customer's main breaker would somehow protect a meter or meter socket from short circuits in the meter or meter socket; however, the customer's main

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[265] *PNM Application for Approval of Advanced Metering Infrastructure Project, Advice Notice No. 521, Ninth Revised Rate No. 16 and Requests for Variance,* 2/26/16 p. 3-4, "AMI. The Commission's Order Granting Variance, issued January 20, 2016, granted PNM's request for variance subject to conditions, including that PNM make its AMI filing by no later than February 28, 2016."

[266] See PNM response to CFRE Interrogatories 2-3. L and 2-3. N, CFRE Exhibit 1.

[267] Although Mr. Hawkins's reference to "something that would open" is completely irrelevant in this instance, his statement is also incorrect; the meters have a remote service switch.

[268] (TOP 3/1/17, p. 118, l. 13-17.)

breaker protects from the customer's service panel downstream into the house or business and is not designed to protect the meter or meter socket or other items on the utility's side of that breaker. Mr. Hawkins incorrectly testified that protecting the meter socket and meter "is the intent, and it should be designed that way by the electrician or **whoever is certifying it** for the customer."[269] (Emphasis added.) *Mr. Hawkins hereby acknowledged that this part of the electrical system, the meter and meter socket,* ***should obtain certification***; however, it is not the customer's responsibility to certify the meter and that the meter and socket components are safe either individually or as an assembly. This is on the utility company side of the service entrance and therefore must be certified by a NM P.E. as part of the P.E. review and certification of the **proposed metering system, the utility company's public interface.**

As per the variance on meter replacements, should PNM's AMI proposal be denied, PNM will resume its meter replacements. CFRE asserts that it would be in customers' best interests, and is required by applicable statutes, that a licensed NM P.E. certify several aspects of PNM's meter related protocols prior to resumption of meter replacements.

CFRE contends that there are issues of public concern that were not fully examined in this case because they were not specifically essential to the issue of PNM's AMI proposal (or they were outside of the capabilities of intervening parties to fully litigate); however, the following issues deserve to be reviewed and applicable procedures certified by a qualified NM P.E.: CFRE believes that PNM has improper meter installation techniques[270] as described in its *Single Phase Meter Safety Course.*[271] Not only do the instructions conflict with the IOWR meter manual

[269] (TOP 3/1/17, p. 120, l. 11-16.)
[270] "[p]ush the meter into position all the way into the clips. This may take some force. It is alright to pound the meter into place with the side of your fist or gently with a rubber mallet." (TOP 3/1/17, p. 123, l. 13-17.)
[271] (TOP 3/1/17 p. 123, l. 10-20.) PNM provided its *Single Phase Meter Safety Course* in response to CFRE 4-18; this describes PNM's meter installation techniques. CFRE is not relying upon this to make its case against PNMs

installation instructions aimed at protecting the sensitive electronic metering device,[272] as would be the case with any meter, especially any electronic meter, but these instructions show a lack of due consideration not to damage the customer owned socket boxes. Installers must take care to use ***controlled*** force to install a meter in either a straight in motion or in a ***vertical*** rocking motion. Any horizontal motion that may occur from rocking horizontally or from gently pounding the meter with the side of a fist or with a mallet could potentially spread the receptors and thus may potentially lead to "hot sockets" and fires in the future. Mr. Hawkins showed a lack of understanding of this potentiality as follows:

> Q [MR. MANNING] Could using a mallet to gently pound the meter potentially lead to hot sockets in the future?
>
> MR. JERMAN: Asked and answered.
>
> MR. MANNING: I don't believe so.
>
> HEARING OFFICER: Overruled.
>
> THE WITNESS: [MR. HAWKINS] Not to my knowledge.[273] [274]

AMI proposal; consequently, we did not request that it be submitted into the case record. CFRE assumes that a copy of this would be on file with the Commission as clearly required by 17.9.560.10 C. (1) NMAC.

[272] "Do not install the meter if it has been dropped or ***otherwise subject to significant impact*** **even if damage cannot be seen**." . . . "Check the condition of the packaging to ensure that there was no damage during shipping." . . . "***As with all*** **precision electronic instruments,** ***the meter should be handled with care***." (Emphasis added.) (Itron OpenWay Riva CENTRON Singlephase Electricity Meter Technical Reference Guide, p. 9.)

[273] Mr. Hawkins indicated that improper meter installation can lead to hot sockets, "These conditions can be indicative of issues known as 'hot sockets,' or a poor meter to socket connection which can create a potential for arcing and increased heat. This poor meter to socket connection ***can be caused by an improper meter installation*** or pre-existing defects in the meter socket." (Emphasis added.) (Rebuttal Testimony of Johnathan Hawkins, February 14, p. 5, l. 12-16.)

[274] Unfortunately, Mr. Hunt also minimized the importance of, or was unfamiliar with, the consequences of improper meter installation techniques, he focused only on making the connection and not acknowledging that spreading of the receptors during an improper installed can lead to hot sockets in the future. (TOP 1/30/17, p. 144, l. 3- p. 145, l. 13.) At least he did acknowledge "[w]ell, sure, there's a correct way. You follow the meter manufacturer's installation instructions." (TOP 1/30/17, p. 144, l. 12-13.) And, this is precisely the point that CFRE is trying to make. PNM's installation instructions do not reflect the care called for in the meter manufacturer's installation instruction.

This issue is tangential to the issue of whether or not to implement PNM's AMI proposal; however, it is applicable to all meter installations, and in order to protect the safety of PNM's customers, CFRE respectfully requests that the Commission ensure that a NM P.E. reviews PNM's prescribed meter installation technique.

Additionally, PNM has not updated its meter testing procedures since it transitioned to solid-state meters, or at least not in a way that reflects that if complaints are lodged, digital meters must be tested in the field without first disconnecting them (as was the practice with analog meters). Being electronic equipment, like a computer, disconnecting a solid-state meter essentially "reboots" them. Therefore, in order to correctly test what is happening with a digital meter for which a complaint was lodged, the meter must be tested prior to disconnecting; this is ***not*** reflected in PNM's *Field Meter Testing and Maintenance* procedures.[275] CFRE asserts that it is generally more expensive to test in the field which is necessary when testing solid state meters vs. the in-shop testing of analog meters, when complaints have been logged (*this additional expense was one of many not taken into account in PNM's cost-benefit analysis*). Of additional concern to CFRE is the difference in digital vs. analog meter capability to protect customers' house wiring and appliances from power surges *and* whether or not whatever meters are installed meet the ANSI C12.10 standard that demonstrates that they are acceptable to be installed in ANSI C12.7 compliant customer owned socket boxes.[276]

[275] PNM provided its *Field Meter Testing and Maintenance* procedures in response to CFRE 4-18. CFRE is not relying upon this to make its case against PNM's AMI proposal; consequently, we did not request for it to be submitted into the case record. CFRE believes that this may fall under 17.9.560.10 C. (1) NMAC. If so, a copy of this would be on file with the Commission.

[276] Please see, CFRE Exhibit 1, 2-3. L and 2-3. N.

16. Independent P.E. Review of Utility Projects that May Affect the Public's Safety and Property is "Reasonably Possible"

The PRC's regulations, specifically the Service Standards for Electric Utilities, 17.9.560.13A. NMAC, should ensure that CFRE's concerns are addressed. It reads as follows:

> **A. Requirement for good engineering practice.** The electric plant of the utility shall be constructed, installed, maintained, and operated ***in accordance with accepted good engineering practice in the electric industry*** to assure, **as far as reasonably possible**, continuity of service, uniformity in the quality of service furnished, and the **safety of persons and property**. (Emphasis added.)

As quoted above, the Commission has its own requirements that effectively reinforce the Engineering and Surveying Practices Act. Accepted good practices in engineering include certification and oversight as described in the Act. Most importantly, accepted good practices require that a NM licensed professional engineer must be in responsible charge and willing to sign a certification seal for projects that may potentially affect the safety of the public and their property. CFRE respectfully requests that the Commission hold the utility companies in NM, including PNM, to the "accepted good engineering practice in the electric industry" and to ensure "as far as reasonably possible" the "safety of persons and property" in NM.[277]

The objective of the Service Standards for Electric Utilities is follows:

> **17.9.560.6 OBJECTIVE:** 17.9.560 NMAC is intended to promote safe and adequate service to the public, to provide standards for uniform and reasonable practices by utilities, and to establish a basis for determining the reasonableness of such demands as may be made by the public upon the utilities.

[277] (17.9.560.13 A. NMAC.)

CFRE asserts that requiring P.E. certification of projects that may affect public safety and property is an exceedingly "reasonable . . . demand[] made by the public upon the utilities." While 17.9.560.6 NMAC, 16-23-2 NMAC, 16-23-3 H. NMAC et. al., and, 16.39.8.9A.(1)(a), NMAC clearly require good engineering practices of utilities, CFRE notes that the objective articulated in 17.9.560.6 NMAC allows the Commission to consider the reasonableness of requiring that the requisite P.E. certification be performed by an **independent** P.E. CFRE respectfully requests that the Commission implement procedures (or amend the above cited rules) in order to ensure that utilities use independent P.E.s to certify projects and or electrical equipment that may affect public safety and property.

While P.E. review and certification are clearly mandated for utility projects that may affect the public's safety and property, CFRE does not find anything in the statutes that specifically prevents a NM licensed P.E. on a utility's staff from certifying projects. Internal utility staff certification may be an improvement over the lackluster utility non-review process employed by PNM in the instant case; at least a licensed P.E. would have to put their professional credentials on the line in certifying the utility's project. However, after all that we have witnessed in the instant case, CFRE certainly does not have confidence in PNM's internal capability ***or in its desire*** to perform acceptable engineering review of projects that may affect the public's safety.

Having ***independent*** P.E.s certify projects would do even more to ensure *public confidence*[278] in P.E. review and certification processes. Independent P.E. certification would offer the public greater assurance of objectivity and therefore greater assurance of the safety of their persons and property. 17.9.560.13 A. NMAC specifies that "***as far as reasonably possible***"

[278] 61-23-2. NMAC.,

(emphasis added), the Commission and the utilities shall ensure that "[t]he electric plant of the utility shall be constructed, installed, maintained, and operated" as to ensure "the safety of persons and property." CFRE contends that requiring ***independent*** P.E. certification is "reasonably possible" and therefore should be specifically required.

CFRE has been pointing out the lack of P.E. certification of PNM's AMI proposal since at least February 8th, 2017 when we filed our *Motion to Dismiss* and our *Brief in Support of Motion to Dismiss.* Nonetheless, PNM has not bothered to ensure that the project received P.E. certification. CFRE finds the fact that PNM did not respond to our focus on this requirement especially troubling because PNM witness Hawkins testified, essentially, that it would not be a big deal to certify the project. He further implied that it might not even cost customers anything. His testimony is as follows:

> Q [by Mr. Manning] If PNM were to perform a professional engineering review, who would bear the cost for that review?
>
> A PNM does have professional engineers on staff, and we would be able to certify the project internally.

The conversation continued and disclosed more concerns:

> Q If you would be able to do that, why have you not done that to this point?
>
> A Because it's -- we don't believe it's required.
>
> Q So even when some new safety issues -- or some testing abnormalities have come to your attention, that has not inspired you to do a more thorough review?
>
> A We're buying a product from a vendor that is required to meet standards, and the vendor is stating to us that they do.
>
> Q So you're relying totally on the vendor's review to determine the safety of your project?

A The vendors are the experts[279] on the requirements of all the individual standards. They would be best to address the compliance with those standards.[280]

Does a prudent consumer rely on a salesperson to ensure the safety of the products that they purchase? Additionally, in the instant case, there are engineering issues that need to be addressed ***that are in no way the responsibility of the vendor***. These include the requisite analysis of whether the fuses on the transformers are appropriately sized for the new meter's specifications. As quoted below, it is the utility, **not the vendor** that is tasked with ensuring the safety of such a project:

> **17.9.560.16 SAFETY:**
>
> **A. Protective measures.**
>
> **(1)** Each utility shall exercise reasonable care to protect its employees, its customers, and the general public from hazards to which they may be subjected.

17. a. NY Accepted a MET Labs Report; Is that Good Enough?

In an apparent attempt to show that the Report is conclusive regarding adherence to the standards, Mr. Jerman asked Mr. O'Dell various questions about the Report's submission to NY state culminating in the following exchange:

[279] (CFRE notes that Mr. Hawkins is supposed to be PNM's expert on transmission and distribution system standards, PNM is responsible for PNM's project, Mr. Hawkins should not be reassigning PNM's responsibility for project oversight to Itron. Mr. Hawkins had stated the following: "Prior to my position as the Manager of Advanced Technology and Strategy, I managed the Electric Distribution Standards Department at PNM. The Electric Distribution Standards Department is responsible for setting engineering design standards and specifications for materials used in the construction of the electrical distribution system. **Electric Distribution Standards included responsibility for Meter Standards.**" (Emphasis added.) (Surrebuttal Testimony of Johnathan Hawkins, February 27, 2017, p.2, l. 5-10.)

[280] (Top 3/1/17 p. 117, l. 5-p. 118, l. 2.) Also see Top 3/1/17 p. 116, l. 6-p. 117, l. 4.

> Q Thank you. Is it your testimony, Mr. O'Dell, that the MET Labs testing and the MET Labs reports that we've been discussing – that's the way that Itron demonstrates compliance with this regulation?
>
> A Yes, that's correct.[281]

It is important to keep in mind that the March 21st revision of the MET Labs Test Report came about because CFRE pointed out testing errors in the November 18th Testing Report. Mr. O'Dell testified that the November 18th Test Report was submitted to NY State, even though it had errors in it that materially prevented it from actually and factually demonstrating compliance to the standards; yet according to Mr. O'Dell, NY had accepted the November 18th report even though it contained the flawed testing procedures that CFRE previously brought to Itron's attention.[282]

There is nothing in the case record that tells us whether or not NY State requires professional engineer review of MET Labs reports, or whether NY State requires a certification seal by a licensed NY P.E. There is nothing in the record that demonstrates that anyone in the state of NY actually checked if the report concludes that the meters meet applicable standards; in fact, there is nothing in the record that demonstrates that NY bothered to see if the report that Itron submitted addresses adherence to the C12.10 standard in any manner.[283] The case record does not indicate whether NY State may accept a MET Labs report without doing anything whatsoever to confirm that the contents thereof are sufficient or addresses all germane ANSI standards, such as C12.10.

However, whether or not NY State accepted the flawed November 18th MET Labs report is of little relevance because the instant case is being litigated in New Mexico. New Mexico state law

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[281] TOP 10/25/17, p. 163, l. 22- p. 164, l. 2.

[282] Itron did not request that MET Labs do a comprehensive review after CFRE pointed out testing errors in the November 18th report because "New York State had accepted the test" (TOP 10/25/17, p. 128, l. 14-18).

[283] (Which we know requires measurements to be taken, measurements which are not in the Reports.)

and applicable regulations **do not** require submission of a MET Labs Test Report;[284] however, **NM does require P.E. project certification and oversight**. There is nothing in the case record that demonstrates that PNM's proposal has been certified by a NM P.E.[285]

After persistently insisting that the Report demonstrates compliance to ANSI C12.10, Mr. O'Dell admitted that the measurements necessary to determine compliance with ANSI C12.10, were not in the Report, and he did not know if MET Labs had taken those measurements.[286] Mr. O'Dell admitted that one does not test to determine adherence C12.10,[287] yet the Report is a "Test Report."[288] Therefore, the Report clearly does not demonstrate compliance with ANSI C12.10. It appears as though New York State regulators simply failed to require third party verification on ANSI C12.10. New Mexico requires that a P.E. certify that the standards have been met as part of the certification of PNM's proposal. It is New Mexico State regulators that are responsible to ensure the safety of New Mexico's residents.

b. The Appendix is Missing from The Met Labs Report

PNM's lack of consistency regarding its expressed desire to have exhibits be "complete" was not limited to the instance thus far mentioned in this brief. The March 21, 2017 cover letter to Mr. Carlos Brando[289] mentions MET Labs's change in the "Device Type" designation of the meters. CFRE is certainly curious why at that late date, and in the 6th revision of the report,[290]

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284 (TOP 10/25/17, p. 160, l.17-21.)
285 (TOP 2/28/17, p. 84, l.10-16.)
286 (TOP 10/25/17, p.136, l. 5-13.)
287 "Again, you don't test for C12.10." (TOP 10/25/17, p.136, l. 16.)
288 (PNM Exhibit 34, p. ii of xix.)
289 (PNM Exhibit 34, cover letter.)
290 " MET Report: EMC & TEL9016A-ANSI REV. 6." (Report footer et al.)

MET labs would change the Device Type of the meters? The Device Type change noted in the March 21st letter, apparently happened *after* NY State had accepted the deficient November 18th version of the report, apparently for some other Device Type of meter. So, if the November 18th version of the report was submitted for another Device Type, was it exactly the same meter with exactly the same functions, and if not, why not?

The cover letter indicates that CFRE should be able to read some more details on this issue in the appendix of the report.[291] However, suspiciously, the appendix of PNM's Exhibit 34 contains an almost blank page; Itron's letter that is referred to in the cover letter is notably absent from the appendix and is not attached to the report.[292] While CFRE speculates that the Device Type change is likely ***not*** *a hugely significant issue* in itself, we do believe that it ***is yet another example of PNM and Itron being less than completely forthright.***

The fact that the Itron letter referred to in the cover letter is not in the appendix makes it appear as though the Itron letter was intentionally removed from the report. If this is the case, then PNM or Itron, not only did not make this exhibit complete, but it appears as though someone intentionally made this exhibit incomplete. This all begs the following question: Did the Report have appendicitis; or, was the appendix removed for some other reason?

[291] "See copy of Itron's letter in the appendix of this report" (PNM Exhibit 34, cover letter, ¶2.)
[292] The Table of Contents, p. v of xix, lists that the appendix is on p. 393 of 393.

18. CONCLUSION

1. CFRE respectfully requests that the Commission deny PNM's AMI proposal.

2. The Commission has long-held that a utility company must consider both the benefits and the risks of a range feasible alternatives prior to committing ratepayers to a resource acquisition of considerable expense (which would affect whether rates are just and reasonable). PNM must consider both risks and feasible alternatives if PNM wants to seek rate recovery for an AMI system of metering.

3. a. A CCN is required for a new utility system. PNM is proposing a new system of metering.

b. Even if a CCN was not required for PNM's AMI proposal, the standard of review for a significant resource acquisition proposal such as PNM's AMI proposal should be equivalent to the standard of review for a CCN.

c. CFRE further asserts that the resource review considerations in the Integrated Resource planning process should be looked to for further guidance and in order to ensure just and reasonable rates for PNM's customers.

d. CFRE argues that the utility's due diligence process of prudently acting in ratepayers' best interests demands nothing less than the application of CCN and Integrated Resource planning considerations. CCN and IR planning rules are aimed at ensuring that the utility aligns its interests with ratepayers' interests.

4. CFRE asserts that the four decertification factors set out in *Commuters Committee* must be addressed by PNM prior to Commission consideration of the abandonment of PNM's meter plant.

5. a. CFRE contends that the examples that CFRE listed in this brief clearly require professional engineer oversight and certification in order to adhere to the New Mexico Engineering and Surveying Practices Act.

b. CFRE encourages the Commission to seek guidance from the New Mexico Board of Professional Engineers and Professional Surveyors by requesting an "advisory opinion" to clarify any perceived ambiguity surrounding the 61-23-22 B. exemption and/or in order to clarify what types of utility company projects require certification and oversight by a licensed professional engineer and what projects do not.

c. While the Board may be of assistance to the Commission in clarifying the intent of the 61-23-22 B. exemption, as per 62-6-4 NMSA 1978, it is the Commission that has "general and exclusive power and jurisdiction to regulate and supervise every public utility in respect to its rates and service regulation . . ." Therefore, it is the Commission that is tasked with regulating the utilities under its jurisdiction and ensuring that all applicable laws, including the New Mexico Engineering and Surveying Practices Act, are adhered to by the utility companies.

d. Should the Commission find that the Engineering and Surveying Practices Act does not apply to PNM's AMI proposal, CFRE respectfully requests that the Commission provide clarification on what types of utility company projects or activities are applicable under the Act.

e. Should the Commission find that the Act does not apply to any utility company projects or activities, CFRE respectfully requests that the Commission provide clarification on its understanding of why the legislature, in 61-23-3. NMSA, would specifically list *property*, *safety*, ***utilities***, *electrical equipment, structures, et al.*, only to then exempt all ***utility*** projects from the very same Act.

6. a. CFRE asserts that the Commission has a responsibility to hold the utility companies in NM, including PNM, to the "accepted good engineering practice in the electric industry" and to ensure "as far as reasonably possible" the "safety of persons and property" in NM.

b. CFRE respectfully requests that the Commission implement procedures to ensure that utilities use *independent* P.E.s to certify utility projects and or electrical equipment in order to "assure . . . the safety of persons and property," because *independent* P.E. review is "reasonably possible" and, therefore, would be consistent with 17.9.560.6 and 17.9.560.13A. NMAC.

c. CFRE respectfully requests that the Commission clarify what constitutes "good engineering practice in the electric industry" as per the PRC's regulations, the Service Standards for Electric Utilities, 17.9.560.13A. NMAC. CFRE specifically request that the Commission clarify if the "good engineering practice[s]" referred to in the Service Standards differ from the practices set forth in the Engineering and Surveying Practices Act and if so, please clarify how and why they differ.

7. CFRE notes that there is a considerable deficiency in the regulatory process when PRC Staff do not have sufficient expertise to review and to weigh in on basic technical engineering matters. CFRE respectfully requests that the Commission somehow resolve the severe lack of engineering expertise of Staff.

8. a. CFRE urges the Commission to order PNM to adhere to NM statutes, and to perform the requisite engineering analysis and certification by a licensed NM P.E. of whatever meters it eventually installs into customer-owned socket boxes.

b. CFRE urges the Commission to allow customers who want to utilize electro-mechanical (analog) meters to do so **at no additional cost**. Though not scrutinized and documented

adequately in the instant case, analog meters can meet the ANSI C12.10 standard that PNM has stated it relies upon to ensure compatibility with customer owned meter boxes.

c. CFRE further requests that the Commission ensure that PNM's meter installation techniques, its meter testing techniques, and its fusses in its transformers are all reviewed and certified by a licensed NM P.E. prior to PNM's resumption of meter replacements.

9. a. CFRE respectfully requests that the Commission hold PNM accountable for not being forthright and truthful in its testimonies by imposing sanctions upon PNM.[293]

b. CFRE respectfully requests that the commission hold harmless ratepayers for any and all legal fees and other expenses as would be consistent with the Section 62-13-3.A and C. of the Public Utility Act which provides for parties to bear their own expenses. PNM has disproportionately represented and fought for shareholder interests; consequently, shareholders should absorb the legal and other costs incurred in PNM's pursuit of its ill-conceived AMI proposal.

[293] In its *Final Order Partially Adopting Corrected Recommended Decision*, PRC Case No. 15-00261-UT, 9/28/16 at 144 (pp. 49-50) the Commission addresses "PNM's spurious and highly misleading claim" about the elimination of pollutants and went on to state that "PNM is put on notice that it may be subject to sanctions if it continues to engage in this sort of deceptive practice in the future."

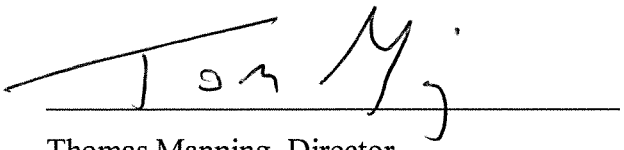
Also see *Order to Show Cause*, 6/8/16, Case No. 15-00261-UT at 9) and 10), addressing PVNGS Unit 1 and Unit 2 leases, ". . . it appears that PNM's supplemental testimony offers no legitimate basis in its response for its failure to provide the requested information;" "PNM should be required to . . . demonstrate[e] that its response . . . was provided in good faith and in furtherance of its obligation to provide truthful and accurate information to the Commission . . .; [and] to show cause . . . why PNM should not face possible sanctions including, but not limited to, denial of the relief requested in PNM's rate application related to the extension of the PVNGS leases at issue or monetary penalties due to possible statutory or administrative violations, as authorized by §§62-12-4, 62-12-5 & 62-12-6, of between one hundred ($100.00) and one hundred thousand ($100,000.00) dollars per offense; with each day's continuing violation deemed as a separate and distinct offense."

CFRE is left to wonder how much more deception by PNM this honorable Commission will allow before the Commission does actually subject PNM to sanctions.

WHEREFORE, for all of the reasons discussed in this brief, Citizens for Fair Rates and the Environment respectfully requests that Commission deny PNM's request for approval of its AMI proposal. CFRE further requests that the Commission find that PNM must comply with the New Mexico Engineering and Surveying Practices Act and it must obtain the certification seal for all of its meter choices. CFRE respectfully requests that the Commission address the other issues summarized in our Conclusion.

Respectfully submitted this 5th day of December, 2017.

Citizens for Fair Rates and the Environment



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BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR PRIOR APPROVAL OF THE ADVANCED METERING INFRASCTRUCTURE PROJECT, DETERMINATION OF RATEMAKING PRINCIPLES AND TREATMENT, AND ISSUANCE OF RELATED ACOUNTING ORDERS	)))))))	**Case No. 15-00312-UT**

CERTIFICATE OF SERVICE

I CERTIFY that on this date I sent via email to the individuals listed below a true and correct copy of *Citizens for Fair Rates and the Environment's Brief-in-Chief* issued on December 5, 2017.

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