

**SOAH DOCKET NO. 473-10-4451
PUC DOCKET NO. 38306**

**TEXAS-NEW MEXICO POWER
COMPANY'S REQUEST FOR
APPROVAL OF ADVANCE METERING
SYSTEM (AMS) DEPLOYMENT AND
AMS SURCHARGE**

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**BEFORE THE STATE OFFICE
OF
ADMINISTRATIVE HEARINGS**

REDACTED

DIRECT TESTIMONY

of

J. RICHARD HORNBY

On behalf of:

ALLIANCE OF TEXAS-NEW MEXICO POWER MUNICIPALITIES

April 8, 2011

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1 **REDACTED DIRECT TESTIMONY OF J. RICHARD HORNBY**

2 **I. INTRODUCTION**

3 **Q. PLEASE STATE YOUR NAME, EMPLOYER, AND PRESENT POSITION.**

4 A. My name is James Richard Hornby. I am a Senior Consultant at Synapse Energy
5 Economics, Inc., 485 Massachusetts Avenue, Cambridge, MA 02139.

6 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?**

7 A. I am testifying on behalf of the Alliance of Texas-New Mexico Power Municipalities
8 ('ATM').

9 **Q. PLEASE DESCRIBE SYNAPSE ENERGY ECONOMICS.**

10 A. Synapse Energy Economics ("Synapse") is a research and consulting firm specializing in
11 energy and environmental issues, including: electric generation, transmission and
12 distribution system reliability, market power, electricity market prices, stranded costs,
13 efficiency, renewable energy, environmental quality, and nuclear power.

14 **Q. PLEASE SUMMARIZE YOUR WORK EXPERIENCE AND EDUCATIONAL**
15 **BACKGROUND.**

16 A. I am a consultant specializing in planning, market structure, ratemaking, and gas
17 supply/fuel procurement in the electric and gas industries. Over the past twenty years, I
18 have presented expert testimony and provided litigation support on these issues in

1 approximately 100 proceedings in over thirty jurisdictions in the United States and
2 Canada. Over this period, my clients have included staff of public utility commissions,
3 state energy offices, consumer advocate offices and marketers.

4 Prior to joining Synapse in 2006, I was a Principal with CRA International and,
5 prior to that, Tabors Caramanis & Associates. From 1986 to 1998, I worked with the
6 Tellus Institute (formerly Energy Systems Research Group), initially as Manager of the
7 Natural Gas Program and subsequently as Director of their Energy Group. Prior to 1986,
8 I was Assistant Deputy Minister of Energy for the Province of Nova Scotia.

9 I have a Master of Science in Energy Technology and Policy from the
10 Massachusetts Institute of Technology (MIT) and a Bachelor of Industrial Engineering
11 from the Technical University of Nova Scotia, now merged with Dalhousie University. I
12 have attached my resume to this testimony as Exhibit JRH-1.

13 **Q. PLEASE SUMMARIZE YOUR EXPERIENCE WITH THE ECONOMICS OF,**
14 **AND RATEMAKING FOR, ADVANCED METERING INFRASTRUCTURE**
15 **(AMI) SUCH AS THE ADVANCED METERING SYSTEM (AMS) PROPOSED BY**
16 **TEXAS-NEW MEXICO POWER COMPANY ('TNMP').**

17 A. Since 2008 I have reviewed the economics of proposed AMI projects for clients in New
18 Jersey, Maine, the District of Columbia, Maryland, Pennsylvania and Nevada. I have
19 submitted testimony on these projects in Maine, Maryland and Pennsylvania. I am
20 currently helping Staff of the Arkansas Public Service review the smart grid filing of
21 Oklahoma Gas and Electric.

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

23 A. TNMP filed a request dated May 26, 2010 requesting approval of its proposed AMS
24 Deployment and AMS Surcharge. The Company's request included the Direct Testimony
25 of witnesses Whitehurst, Burke, Kessler, Morris, Monroy and Montgomery in support of

1 its petition. On February 22, 2011 the Company filed supplemental testimony of
2 witnesses Whitehurst, Burke and Kessler proposing a revised, lower level of AMS
3 revenue requirements and AMS surcharges. (I will refer to these revised values presented
4 in Mr. Whitehurst's Supplemental testimony as the Company's proposed AMS revenue
5 requirements and AMS surcharges).

6 ATM retained Synapse Energy Economics to review the reasonableness of the
7 Company's proposed AMS costs and AMS surcharge. The purpose of my testimony is to
8 present the results of my analysis of the estimated benefits of the AMS relative to its
9 estimated costs, the reasonableness of the costs and savings used in the calculation of the
10 proposed AMS surcharge, as well as the reasonableness of the proposed surcharge in
11 general. The fact that I do not address other aspects of the Company's filing should not
12 be interpreted to mean I agree with those aspects.

13 **Q. WHAT DATA SOURCES DID YOU RELY UPON TO PREPARE YOUR**
14 **TESTIMONY AND EXHIBITS?**

15 **A:** I relied primarily on the Direct Testimony, exhibits, and workpapers of the Company
16 witnesses. I also relied upon Company responses to various data requests, many of which
17 I cite and provide in Exhibit JRH-7. (I cite these responses using the initials of the
18 intervening party, the data request set and the request number, e.g. ATM 1-1). In
19 addition, I relied upon the Texas legislation and regulations governing AMS, data
20 collected from AMI filings of other utilities and various reports regarding AMI and the
21 functions it can enable.

1 **II. SUMMARY CONCLUSIONS AND RECOMMENDATIONS**

2 **Q. PLEASE SUMMARIZE THE COMPANY’S PROPOSED AMS.**

3 A. The major components of the Company’s proposed AMS are advanced meters, a
4 communication system based upon the AT&T cellular network, a transaction
5 management system (TMS), a Meter Data Management System (MDMS) and an Outage
6 Management System (OMS), (Kessler Direct, p. 3). The Company states that its proposed
7 AMS will provide the functionality required under P.U.C. SUBST. R. 25.130(d)(3)

8 The Company is proposing to deploy its AMS throughout its four service territories over
9 a five year period, 2011 through 2015. TNMP estimates that the gross revenue
10 requirements associated with its AMS capital expenditures and operating and
11 maintenance (O&M) expenses over 15 years to be ****Begin Confidential ****
12 ******* ** End Confidential**** and the total savings in meter reading costs to
13 be ****Begin Confidential ** ***** End Confidential****.¹ The resulting
14 estimated net revenue requirements are \$126.1 million (Whitehurst Supplemental, p.9).

15 **Q. PLEASE SUMMARIZE YOUR CONCLUSION AND RECOMMENDATION**
16 **REGARDING TNMP’S PROPOSED AMS.**

17 A. My primary conclusion is that TNMP has not demonstrated that its proposed AMS is the
18 most cost-effective approach of providing the functionality required under Texas
19 legislation and regulations. This conclusion is based upon the following facts:

- 20 • The estimated savings in meter reading and meter operations are approximately
21 57% of the gross AMS revenue requirements, but the estimated savings in meter
22 operations are not reflected in the calculation of the AMS surcharge.

¹ Exhibit SRW-S-1, *surcharge* tab.

- 1 • The Company’s estimated AMS project cost, expressed as total capital plus O&M
2 cost per installed meter, is higher than the other Texas utility AMI projects the
3 Commission has approved. This higher cost is primarily due to higher costs for
4 its back-office systems² and for its meters.
- 5 • The Company’s higher back-office costs are primarily due to inclusion of an
6 OMS as a component of its AMS project. An OMS is not included in the
7 minimum functions required of an AMS, but is instead a system the Company
8 would install as part of its normal course of business. The Company is not
9 proposing to achieve any measurable improvements in the reliability of its service
10 as a result of including the OMS.
- 11 • TNMP is proposing a public cellular network as the communication system for its
12 AMS but has not documented the analyses underlying that choice. The Company
13 will likely propose additional investments in other communication technology if
14 and when it proposes investments in distribution automation.
- 15 • The savings reflected in the AMS revenue requirements are limited to reductions
16 in meter reading costs.

17 Based upon those conclusions I recommend that the Commission not approve the
18 Company’s proposed Smart Meter Plan as filed. Instead, I recommend that the
19 Commission require the Company to revise and refine its proposed AMS in order to
20 identify the most cost-effective smart meter technology deployment strategy. The
21 Company should

- 22 • remove the costs of the OMS from the AMS revenue requirements;

² Back office systems include hardware and software for the TMS, MDMS and OMS.

- 1 • investigate the potential for reducing its costs for meters and back-office systems;
- 2 • document the analyses underlying its proposed communication system; and
- 3 • provide an estimate of savings in distribution system asset management no later
- 4 than a year after it completes its system-wide deployment of AMS.

5 **Q. PLEASE SUMMARIZE THE COMPANY'S PROPOSED AMS SURCHARGE.**

6 A. The Company proposes to recover the AMS revenue requirements from all rate classes
7 through a new AMS surcharge that would operate independent of base rates. The
8 proposed surcharge is designed as a charge per meter per month which would be in effect
9 for two periods, or tiers, over 12 years from July 1, 2011 through June 30, 2023. The
10 proposed residential AMS surcharge is \$3.76 per meter per month for both the first-tier
11 and second-tier periods.

12 **Q. PLEASE SUMMARIZE YOUR CONCLUSION AND RECOMMENDATION**
13 **REGARDING TNMP'S PROPOSED AMS SURCHARGES.**

14 A. My conclusion is that TNMP's proposed AMS surcharges are not reasonable because
15 they are designed to collect the revenue requirements of an AMS that is not reasonable.
16 In addition, TNMP is proposing to collect the AMS surcharges from customers in some
17 sections of its service territory for up to five years before those customers receive any
18 services from the AMS. Finally the Company has not committed to file a general rate
19 case after its AMS is fully deployed in order to reflect any further benefits from that
20 deployment in its base rates. Based upon those conclusions, I recommend that the
21 Commission require the Company to:

- 22 • set its AMS surcharges to collect only the level of AMS revenue requirements the
23 Commission determines are reasonable;

- 1 • file a general rate case after one year of system-wide operating experience with
2 the AMS.

3 **III. ESTIMATED COSTS AND BENEFITS OF TNMP AMS**

4 **1. TNMP Obligation to Demonstrate Reasonable Costs**

5 **Q. IS TNMP OBLIGATED TO IMPLEMENT AN AMS?**

6 A. No. I agree with the Company’s position that deployment of an AMS is voluntary
7 (Response ATM 1-6). My understanding of the Texas policy and regulatory framework is
8 that Texas utilities such as TNMP are encouraged to implement AMI technology, but that
9 deployment is voluntary. In order to encourage this implementation House Bill (HB)
10 2129 directed the Commission “...to establish a nonbypassable surcharge for a utility to
11 recover reasonable and necessary costs incurred in deploying advance metering and
12 metering information networks.”³ The Commission has established ten functions that a
13 utility proposing to recover AMI costs through that surcharge rule must support. Those
14 functions are specified in P.U.C. SUBST. R. 25.130(d)(3).

15 **Q. IS TNMP EXPECTED TO DEMONSTRATE THAT ITS ESTIMATED COSTS,**
16 **SAVINGS AND SERVICE IMPROVEMENTS ARE REASONABLE?**

17 A. Yes. The Commission specified the reasonableness of the estimated costs and savings of
18 TNMP’s proposed AMS as issues to be addressed in this proceeding on pages 3 and 4 of
19 its preliminary order of July 8, 2010. In other words TNMP must still satisfy its statutory
20 obligation to provide service at reasonable rates.

21 HB 2129 encourages the adoption of AMI technologies as a policy. However that
22 Act leaves the details of the strategies for implementing this policy to the discretion of

³ *A Report on Advanced Metering as Required by House Bill 2129*, Public Utility Commission of Texas (September 2010) at 13.

1 each individual Texas utility and the regulatory oversight of the Commission. This
2 approach is consistent with sound public and ratemaking policy. First, there are many
3 different possible approaches to deploying an AMS. Second, Texas utilities provide
4 electricity to service territories that differ widely in terms of key attributes such as
5 location (e.g. contiguous versus non-contiguous), mix of customers by rate class,
6 geographical distribution of customers (e.g. number of customers per square mile) and
7 existing distribution systems. Therefore, it is not surprising that the Texas legislature has
8 left it up to each utility to develop an AMS that is reasonable for its specific service
9 territory.

10 In terms of savings and service improvements, the Texas Legislature decision to
11 encourage utilities to deploy AMI was based upon an assumption that implementation of
12 these technologies had the potential to provide benefits in the form of reductions in costs
13 and improvements in service. For example HB 2129 identifies the following potential
14 benefits "...increase the reliability of the regional electrical network, encourage dynamic
15 pricing and demand response, make better use of generation assets and transmission and
16 generation assets, and provide more choices for consumers..." Thus, TNMP is expected
17 to propose an AMS whose gross cost is reasonable, to achieve reductions in certain of its
18 distribution service costs to offset those gross costs and to achieve improvements in
19 certain of its distribution services that will represent an increase in value to its customers.

20 **Q. IS IT PARTICULARLY IMPORTANT THAT TNMP DEMONSTRATE THE**
21 **REASONABLENESS OF ITS ESTIMATED COSTS AND BENEFITS IN THIS**
22 **PROCEEDNG?**

23 A. Yes. It is particularly important that TNMP demonstrate the reasonableness of its
24 estimated costs and benefits in this proceeding.

1 First, TNMP is effectively seeking pre-approval of its estimated expenditures on
2 the AMS project. This request for pre-approval is a departure from traditional rate
3 regulation under which utilities do not request recovery of their investments until after
4 they have made those investments, at which time they are expected to demonstrate that
5 the actual investment is “used and useful” and the actual costs are reasonable. If and
6 when the Commission grants pre-approval much, if not all, of the financial risk
7 associated with this AMS project will shift from TNMP management and shareholders to
8 TNMP ratepayers. Shifting financial risk of the AMS project to ratepayers is a concern
9 because ratepayers have no ability to control the costs of project or to ensure that it
10 produces reductions in distribution service operating costs or improvements in
11 distribution service performance.

12 Second, the estimated annual revenue requirements of the TNMP AMS project
13 are significant. At approximately**Begin Confidential ** ***** **End
14 Confidential ** per year⁴ the AMS revenue requirements are greater than the increase in
15 revenue requirements the Commission approved in TNMP’s recent general rate case.
16 The AMS surcharge TNMP is proposing to recover the residential rate class portion of
17 those revenue requirements, at \$3.76 per month for 12 years, would be the highest AMS
18 surcharge in Texas and one of the highest AMS surcharges in the country. Ratepayers
19 are entitled to an assurance that the costs, savings and benefits underlying these revenue
20 requirements and AMS surcharges are reasonable.

⁴ Exhibit SRW-S-1, *surcharge* tab

1 **2. Reasonableness of TNMP Proposed AMS**

2 **Q. WHAT METHODS DID YOU USE TO ANALYZE THE REASONABLENESS OF**
3 **TNMP’S PROPOSED AMS?**

4 A. I analyzed the reasonableness of TNMP’s proposed AMS using three main methods.
5 First, I compared its estimate of benefits to its estimate of costs to determine the extent to
6 which estimated savings would offset estimated costs, i.e. a benefit-cost type analysis.
7 Second, I compared the estimated costs and savings of its AMS project, expressed as
8 totals per installed meter, to the corresponding unit costs and savings of the three Texas
9 utilities whose AMI projects have received Commission approval, i.e. a benchmarking
10 type analysis. Third, to the extent not covered in methods one and two, I reviewed the
11 analyses underlying TNMP’s decision to propose their particular AMS approach.

12 **Benefits versus Costs**

13 **Q. IS THERE A BODY OF ELECTRIC INDUSTRY LITERATURE ON METHODS**
14 **FOR DEVELOPING A BUSINESS CASE TO DEMONSTRATE THE**
15 **REASONABLENESS OF AMS PROJECTS?**

16 A. Yes. Utilities have been analyzing AMI as an element in the modernization of their
17 distribution systems for many years.⁵ The problem utilities have faced in the past, and
18 that many continue to face, is the inability to develop a business case to justify the
19 investment in AMI. Some utilities have been able to justify investments in AMI based
20 solely on the reductions in distribution service costs they would achieve from that
21 investment. However other utilities have estimated that reductions in distribution service
22 costs would offset only 50 to 70 percent of their AMI costs and, as a result, have been
23 unable to justify the investments solely on the basis of their operational savings. As a

⁵ King, Chris. *Smart Grid: The Business Case*. eMeter Strategic Consulting, October 14, 2010. Smart Grid Newsletter Webinar broadcast October 14, 2010.

1 result, numerous reports have been prepared to provide guidance to utilities on methods
2 for developing a business case for AMI by quantifying savings in electricity supply costs
3 in addition to reductions in distribution service costs.⁶

4 **Q. DID THE COMPANY PREPARE AN ESTIMATE OF THE COMPREHENSIVE**
5 **TOTAL BENEFITS AND COSTS OF ITS PROPOSED AMS?**

6 A. No. TNMP did prepare an estimate of the comprehensive total benefits of the AMS
7 project for which it sought a grant under the American Recovery and Reinvestment Act
8 ('ARRA') (Responses ATM 1-1c and 1-31). However, TNMP's proposed AMS in this
9 proceeding differs from the AMS project for which it sought an ARRA grant (Responses
10 ATM 4-9). In particular in this proceeding TNMP is not proposing to include
11 investments which would enable it to reduce the non-meter related costs of operating its
12 distribution system such as Supervisory Control and Data Acquisition ("SCADA"),
13 substation automation or distribution automation.

14 TNMP did not prepare an estimate of the comprehensive total benefits of the
15 AMS project for which it is seeking approval in this proceeding. According to TNMP
16 witness Montgomery, "Such a cost-benefit analysis is not necessary in this case because
17 the Texas Legislature has already determined that there are benefits to deploying
18 advanced metering" (Montgomery Direct page 2). TNMP expands upon his rationale for
19 not providing a comprehensive benefit cost analysis in responses to ATM 1-26, 1-31, 1-
20 50, 3-8 and 3-9.

21 **Q. DO YOU AGREE WITH TNMP'S RATIONALE FOR NOT PROVIDING A**
22 **COMPREHENSIVE COST-BENEFIT ANALYSIS?**

23 A. No.

⁶ *Deciding on "Smart" Meters: The Technology Implications of Section 1252 of the Energy Policy Act of 2005.* Edison Electric Institute. September 2006 and *Methodological Approach for Estimating the Benefits and Costs Of Smart Grid Demonstration Projects.* Electric Power Research Institute. January 2010.

1 I agree that the Texas Legislature has determined that the deployment of advanced
2 metering has the potential to provide various benefits. However, from a policy
3 perspective it is my understanding that the Texas Legislature is relying upon the
4 Commission to ensure that specific AMI projects are not approved until the Commission
5 has determined that the costs of those specific AMI projects are reasonable. One test of
6 reasonableness is a demonstration that the total benefits to all parties of the specific
7 project are expected to exceed the total costs of that specific project. By all parties I
8 mean customers, suppliers of electricity (e.g., REPs) and to distribution utilities. By total
9 benefits I mean benefits such as improvements in service performance and reductions in
10 air emissions in addition to reductions in electricity supply and delivery costs.

11 **Q. HOW DO TNMP'S ESTIMATED REDUCTIONS IN DISTRIBUTION SERVICE**
12 **COSTS COMPARE TO ITS ESTIMATED AMS COSTS?**

13 A. TNMP has estimated savings in two areas of its distribution service operations, meter
14 reading and meter operations (which it recovers through discretionary charges). The
15 Company's estimated total savings in meter reading through 2023 are ****Begin**
16 **Confidential ** ***** **End Confidential **** (Exhibit SRW-S-4). Its estimate
17 of annual savings in meter operations is ****Begin Confidential ** ***** **End**
18 **Confidential **** (Cities LK 1-7), which would total to ****Begin Confidential ****
19 ******* **End Confidential **** over 12.5 years (2011 through June 2023). The
20 combined total of savings in those two categories is approximately 57 percent of TNMP's
21 total, or gross, AMS revenue requirements. This represents a benefit to cost ratio, i.e.,
22 meter reading savings divided by gross revenue requirements, of 0.57.

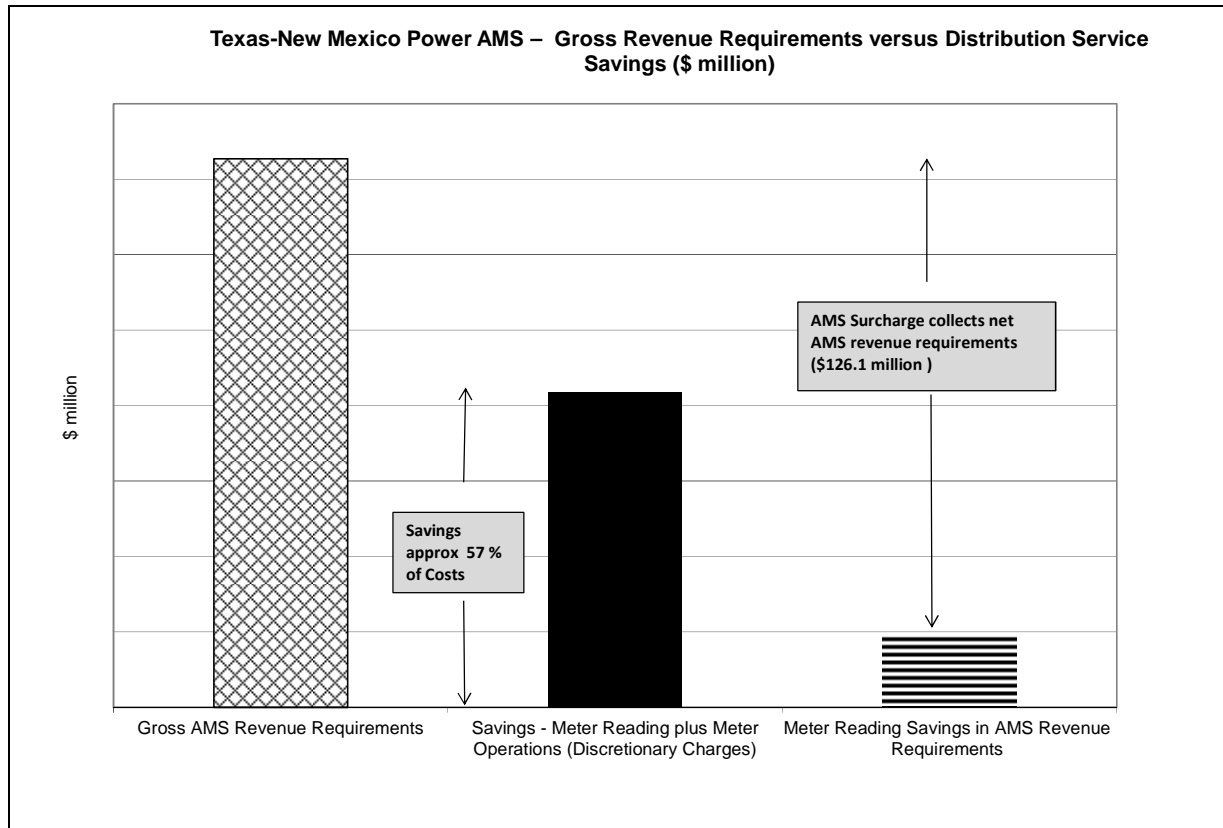
23

1 **Q. HAS TNMP REFLECTED ALL OF THOSE SAVINGS IN ITS PROPOSED NET**
2 **AMS REVENUE REQUIREMENTS?**

3 A. No. TNMP has reflected its meter reading savings in its proposed AMS revenue
4 requirements but not its estimated savings in meter operations.

5 Since TNMP's estimated meter reading savings only offset approximately 13
6 percent of the gross AMS revenue requirements, TNMP is proposing an AMS surcharge
7 to recover the remaining 87 percent of that amount.

8 The relationship between TNMP's gross AMS revenue requirements and its
9 estimated savings is illustrated in the bar chart below, which is attached as Exhibit JRH-
10 2. The column on the far left, in cross-hatch, represents the gross revenue requirements of
11 the AMS project. The middle column, in black, represents the combined total savings in
12 meter reading and meter operations through 2023. The column on the right, with
13 horizontal lines, represents the savings in meter reading. The Company's proposed AMS
14 Surcharge is designed to collect the difference between its gross AMS revenue
15 requirements and its estimated savings in meter reading.



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Q. WHY DID TNMP NOT INCLUDE ITS SAVINGS IN METER OPERATIONS IN THE CALCULATION OF ITS NET AMS REVENUE REQUIREMENTS?

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A. TNMP’s savings in meter operations are primarily attributable to reductions in the annual level of operating costs for meter related work requiring field visits by TNMP staff. TNMP currently collects the revenue requirements associated with that activity through its discretionary charges. TNMP maintains that it proposed reflecting its anticipated AMS-related savings in that area as reductions in discretionary fees in PUC Docket 38480, its recent general rate case. TNMP further maintains that its savings in that area are implicitly reflected in the revenue requirements to which it agreed in the stipulation in that case, even though the parties to the stipulation did not agree to any reductions in discretionary fees. (ATM 1-31e, 7-4).

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1 The stipulation filed in PUC Docket 38480 makes no reference to TNMP's
2 estimate of annual savings in meter operations or proposed reductions in discretionary
3 fees.

4 **Q. HAVE OTHER UTILITIES ESTIMATED THAT DISTRIBUTION SERVICE**
5 **SAVINGS FROM THEIR AMI PROJECTS WILL OFFSET ALL, OR A HIGH**
6 **PERCENTAGE OF, PROJECT COSTS?**

7 A. Yes. As noted earlier some utilities have estimated reductions in distribution service costs
8 that completely offset their AMI investment, while others have estimated their reductions
9 in distribution service costs would offset 50 to 70 percent of their AMI costs.

10 **Q. WHY ARE THE ESTIMATED DISTRIBUTION SAVINGS UNDERLYING**
11 **TNMP'S PROPOSED AMS SURCHARGE A SMALL PERCENTAGE OF ITS**
12 **GROSS AMS REVENUE REQUIREMENTS?**

13 A. The estimated distribution savings underlying TNMP's proposed AMS surcharge are
14 small percentage of its gross AMS revenue requirements for several reasons. First, as
15 just discussed, TNMP maintains that its savings in meter operations are already reflected
16 in its new base rates, so they can't be used to calculate its AMS surcharge. Second,
17 TNMP's estimated total project costs are higher than those of other utilities when
18 compared on a cost per installed meter basis. Third, unlike distribution utilities in other
19 states with retail competition, TNMP does not bill customers directly and therefore it will
20 not realize savings in the areas of billing, theft reduction and credit and collections.
21 Instead REPs who serve TNMP customers will realize the savings in those three
22 operational areas. Fourth, TNMP has not estimated any savings in the area of distribution
23 system asset management.

1 **Comparison of TNMP estimates to other utility AMI projects**

2 **Q. DID TNMP ANALYZE OTHER UTILITY AMI PROJECTS TO BENCHMARK**
3 **ITS ESTIMATED COSTS AND SAVINGS?**

4 A. No. TNMP did not evaluate alternative approaches to designing its AMS (ATM 1-4a, 4-
5 13) nor did it not analyze the AMI projects of other utilities. TNMP does not believe
6 there are other utilities with sufficiently comparable AMI projects (Responses to ATM 1-
7 22 and 7-3d).

8 **Q. CAN ONE GAIN INSIGHTS FROM COMPARING TNMP'S ESTIMATED**
9 **COSTS AND SAVINGS TO THOSE OF OTHER UTILITIES?**

10 A. Yes. I agree with TNMP that it would be ideal to find a group of utilities closely similar
11 to TNMP on key criteria (e.g., non-contiguous service territories, geography, weather,
12 number of customers by rate class) who had installed AMS projects with the same
13 functionality and who were prepared to share their cost and savings data. However, even
14 in the absence of data for that ideal comparison group, there are insights to be gained by
15 comparing TNMP's estimated costs and savings with those of other utilities. As
16 demonstrated below, such comparisons have the potential to provide further evidence
17 regarding the reasonableness of TNMP's AMS project.

18 **Q. ARE THERE INDUSTRY INITIATIVES UNDERWAY TO HELP UTILITIES**
19 **SHARE INFORMATION AND EXPERIENCE REGARDING AMI PROJECTS,**
20 **PARTICULARLY SMALLER UTILITIES SUCH AS TNMP?**

21 A. Yes. There are various industry initiatives underway to help utilities share information
22 and experience regarding AMI projects.

- 1 • A Gridwise Alliance has been operating since 2003 as a forum for sharing
2 information on smart grid technologies and concepts. Oncor, CenterPoint and
3 AEP are members.⁷
- 4 • The Federal Energy Regulatory Commission (FERC) and the National
5 Association of Regulatory Commissioners (NARUC) have a smart response
6 collaborative as well as a smart grid collaborative.⁸
- 7 • A Smart Grid Research Consortium was established in 2010 specifically to help
8 electric co-operatives, municipalities and small utilities to assess smart grid
9 technologies, smart grid experience and develop investment models. Blue Bonnet
10 Electric, a Texas co-operative is a member.⁹

11 **Q. PLEASE DESCRIBE YOUR BENCHMARKING ANALYSES OF TNMP COSTS**
12 **AND SAVINGS.**

13 A. In the absence of data for an ideal peer group of small utilities with similar AMS projects
14 I prepared a comparison of TNMP's AMS project to those of the other three Texas
15 utilities. My rationale was that each of these AMS projects had to have the same
16 minimum functionality. The purpose of my comparison is to identify, for each major
17 AMS component, the similarities and differences between the utilities

18 For costs I assembled estimates of capital costs and total project operating costs
19 reported in public documents from the proceedings of the other three Texas utilities. I
20 grouped that cost data into four major categories – meters, communication, back-office
21 systems and other. (The “other” category includes costs for in-home devices, customer
22 interfaces, systems management and security). For comparison purposes I then divided

⁷ At www.gridwise.org

⁸ At www.naruc.org/smartgrid

⁹ Papers from their November 2010 conference are available at www.smartgridresearchconsortium.org.

1 the absolute cost data of each utility by the total number of meters to be installed to
2 produce unit costs per installed meter. For meters I also assembled estimates of capital
3 costs from utility AMI filings outside of Texas.

4 For savings I used a similar process. I assembled reported estimates of savings
5 from the proceedings of the other three Texas utilities as well as from AMI filings of
6 utilities outside of Texas. I grouped that data into the three categories for which TNMP
7 could realize major savings – meter reading, meter operations, and distribution system
8 asset management. Again, for comparison purposes I then divided the absolute savings
9 data of each utility by the total number of meters to be installed to produce unit savings
10 per installed meter.

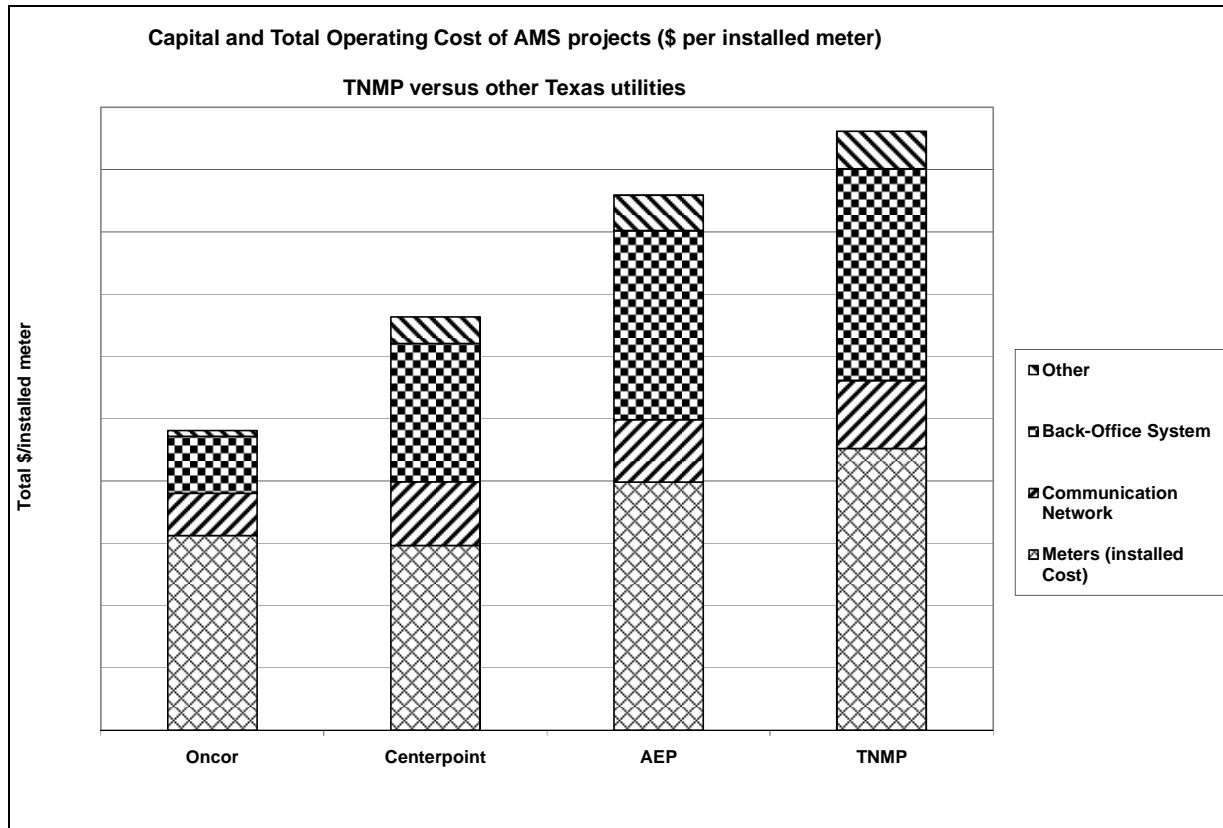
11 3. Analysis of TNMP's Estimated Costs

12 Q. WHAT DOES YOUR ANALYSIS REVEAL ABOUT TNMP'S TOTAL 13 ESTIMATED COSTS?

14 A. The three largest components of TNMP's gross estimated revenue requirements are
15 meters (54%), back-office systems (33%) and communication (9%).

16 When expressed on a per installed meter basis, the capital plus total O&M cost of
17 TNMP's AMS is approximately 10 percent higher than that of AEP and over 50 percent
18 higher than that of an average of Oncor and CenterPoint. These unit costs are presented
19 in the chart below, which is attached as page 1 of Exhibit JRH-3.

20 The chart presents columns representing the total capital plus O&M cost of the
21 AMI projects of Oncor, CenterPoint, AEP and TNMP respectively. The column for each
22 utility shows the composition of the total cost by major category – meter costs in cross-
23 hatch, communication costs as right to left upward diagonal, back-office costs as checker
24 fill and other costs as right to left downward diagonal.



1

2 TNMP's cost per installed meter is higher than those of the other three Texas utilities

3 primarily due to higher costs in two categories, back-office systems and meters.

4 **Q. WHAT DOES YOUR ANALYSIS REVEAL ABOUT THE BACK-OFFICE**

5 **SYSTEM COST COMPONENT OF TNMP'S TOTAL COST?**

6 A. TNMP's back-office system costs are approximately ****Begin Confidential ****

7 ******* **End Confidential **** higher than those of AEP and over ****Begin**

8 **Confidential ** ***** **End Confidential **** as high as those of Oncor and

9 CenterPoint on average. TNMP's higher back-office costs are primarily attributable to its

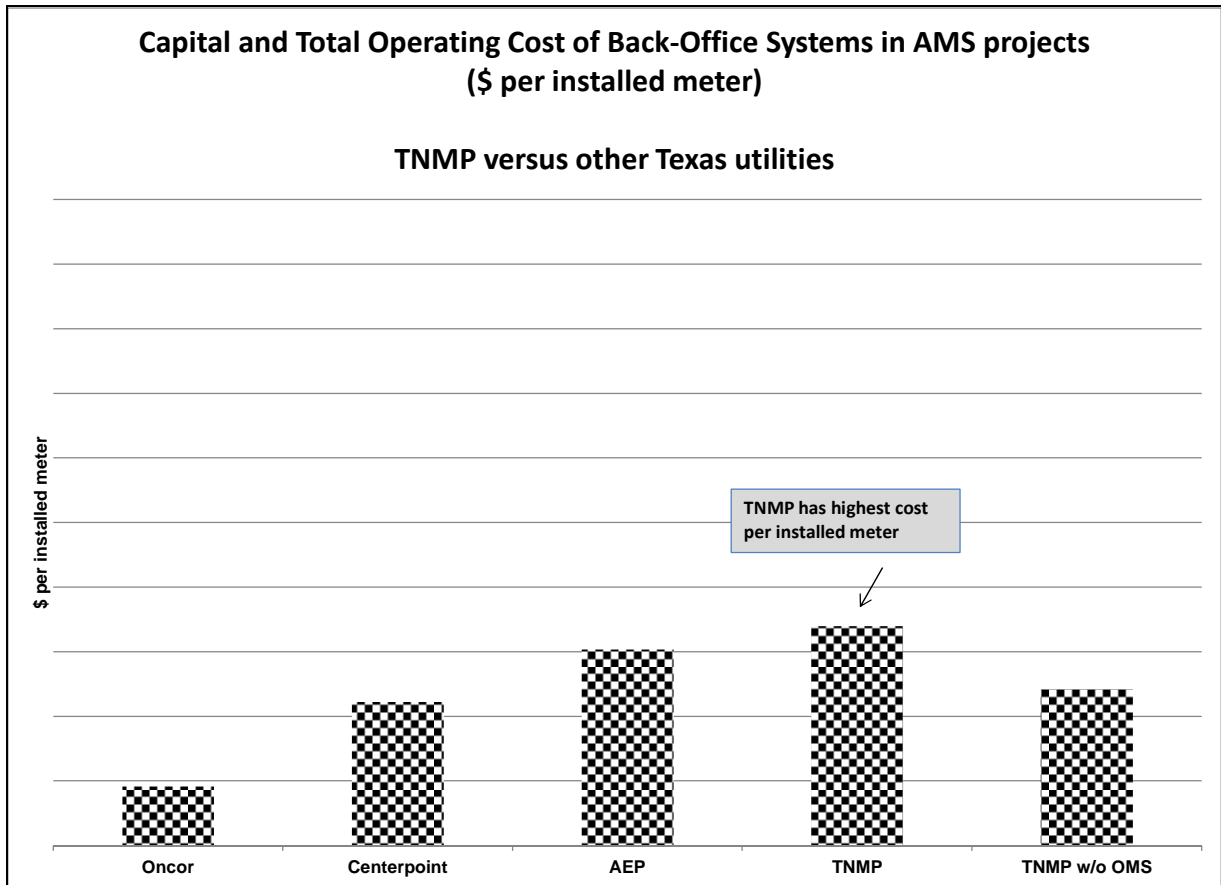
10 inclusion of approximately ****Begin Confidential ** ***** **End Confidential ****

11 in OMS costs in its AMS project costs. (The estimated costs of the OMS are indicated in

12 Exhibit JRH-4 based on responses ATM 2-19 and Cities LK 3-22.) To the best of my

1 knowledge the three other Texas utilities did not include any OMS costs in their AMS
2 projects.

3 The chart below, which is attached as page 2 of Exhibit JRH-3, presents the
4 back-office costs of each of the four utilities expressed as \$ per installed meter.



5

6 **Q. IS IT REASONABLE FOR TNMP TO INCLUDE THE COST OF AN OMS IN ITS**
7 **AMS PROJECT COSTS?**

8 A. No.

9 The general purpose of an OMS is to help TNMP identify the location of the
10 failed element causing the outage. In the absence of AMS meters utilities used an OMS
11 to track customer calls, group those calls by circuit and create an association between
12 customer call information and the location of the failed element or elements on the

1 system. Utilities with AMS meters, such as TNMP, would use an OMS to process
2 information delivered directly from those meters to help identify the elements that are out
3 of service.

4 TNMP interprets the list of minimum AMS functions as calling for, or at least
5 supporting the inclusion of, the functionality provided by an OMS (ATM 2-16 and 3-6;
6 Cities LK 3-1). From a policy perspective I do not agree with TNMP's interpretation that
7 the list of minimum AMS functions calls for or supports the inclusion of the functionality
8 provided by an OMS. Such systems are not new to the electric industry. TNMP, like
9 most utilities, is required to provide reliable service by minimizing both the frequency
10 and the duration of outages.¹⁰ Thus, to the extent that an OMS helps improve reliability I
11 would expect TNMP to invest in an OMS as part of its normal course of business.

12 Of most importance in this proceeding is the fact that the Company is not
13 claiming that it will achieve a measurable reduction in the frequency or duration of
14 outages as a result of deploying the OMS. In other words the Company is not expecting
15 any improvement in the reliability of its service (ATM 1-28, 2-17, 2-18, 3-6, 3-14 and
16 Cities LK 1-12, 3-2).

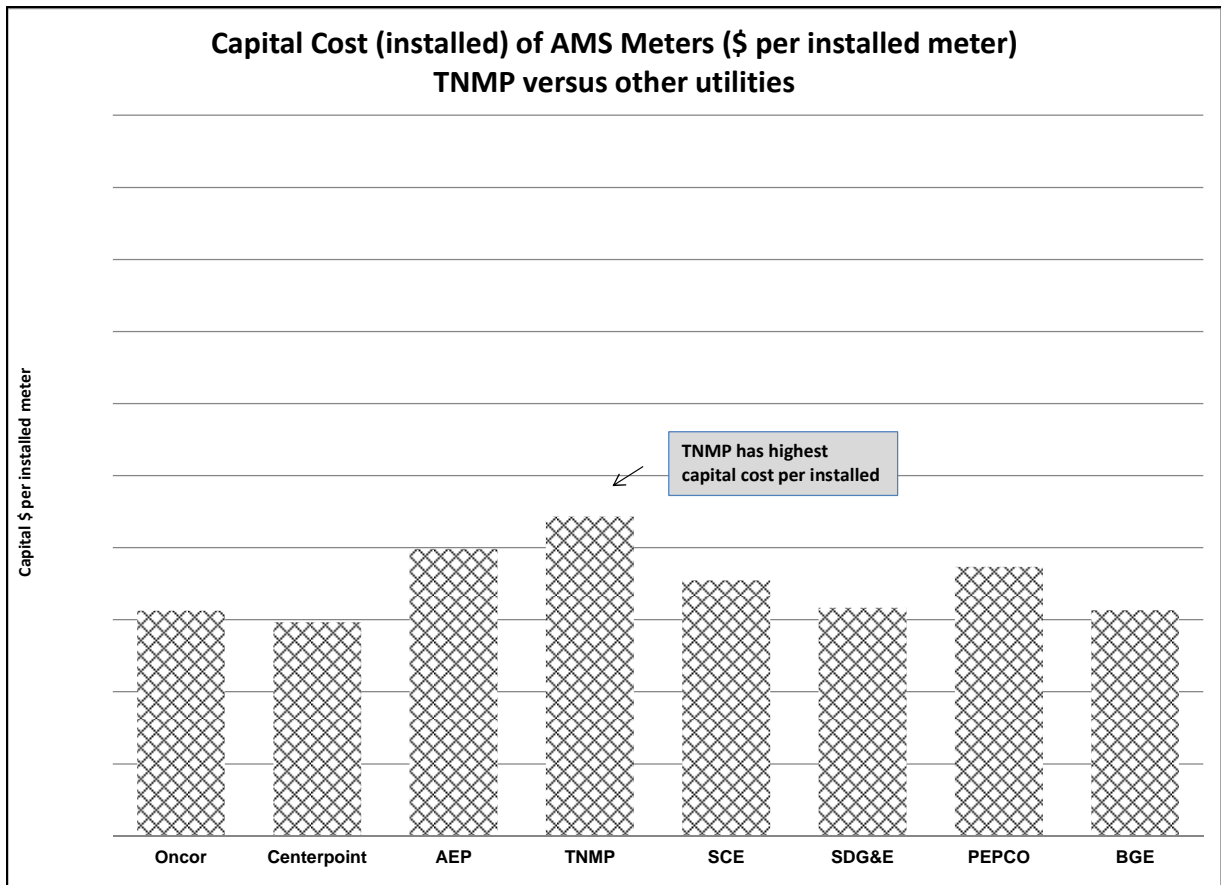
17 It is not surprising that TNMP is not projecting the OMS to enable it to resolve
18 outages materially faster than at present. An OMS, in and of itself, does not reduce the
19 frequency of outages. Moreover an OMS, in and of itself, may not reduce the duration of
20 outages materially. The purpose of the OMS is to identify the failed element and its
21 location. While an OMS that receives signals from AMS meters may reduce the time it
22 takes TNMP to locate the locations of its outages, it is not likely to reduce the overall

¹⁰ Standard metrics are system average interruption frequency index (SAIFI) and system average interruption duration index (SAIDI).

1 time required to repair the cause of the outage, and thus there may be little or no
2 reduction in the average duration of outages.

3 **Q. WHAT DOES YOUR ANALYSIS REVEAL ABOUT THE METER COST**
4 **COMPONENT OF TNMP'S TOTAL COST?**

5 A. TNMP's meter capital costs per installed meter are approximately ****Begin Confidential**
6 **** ***** **End Confidential **** higher than those of AEP and between ****Begin**
7 **Confidential** ***** **End Confidential **** higher than those of other
8 utilities in my comparison group. These unit costs are presented in the chart below,
9 which is attached as page 3 of Exhibit JRH-3.



10

11

1 **Q. WHAT DOES YOUR ANALYSIS REVEAL ABOUT THE COMMUNICATION**
2 **COMPONENT OF TNMP'S PROPOSED AMS?**

3 A. TNMP is proposing to use a public cellular network, specifically AT&T, for the
4 communication component of its AMS. Company witness Kessler provides TNMP's
5 rationale for choosing this approach on page 4 of his Direct Testimony and in ATM 1-4.
6 One of his reasons is that a private network would be prohibitively expensive. However
7 Mr. Kessler did not document the comparisons and analyses of communication
8 technology alternatives underlying his choice of a public cellular network (ATM 1-14, 1-
9 24). The design of a communication system is a key component of an AMS and should
10 be documented.¹¹

11 My analysis indicates that TNMP's estimated cost for the communication
12 component of its AMS compares favorably with the communication component of the
13 AMI projects of the other three Texas utilities. However, it is important to note that if
14 and when TNMP proposes investments in distribution system automation to reduce the
15 non-meter related costs of operating its distribution system it will very likely propose
16 additional investments in other communication technologies (ATM 1-1c). This is
17 because the electric industry does not have extensive experience using public cellular
18 networks to support distribution automation and hence there is uncertainty regarding the
19 ability of that approach to support distribution applications at the level of reliability
20 expected by the electric industry.¹²

¹¹ Schmidt, Rick. *Communications Infrastructure for the Smart Grid*. CRN Smart Grid Summit. June 30, 2010. Power Systems Engineering. www.powersystems.org

¹² Plummer, Charles. *Communications Networks: The Enablers of Utility Automation Success*. Power Systems Engineering. 2009 (www.powersystems.org) and Chandler, Jimmy. *Advanced Meter Infrastructure Systems Comparisons*. National Rural Telecommunications Cooperative. November 8, 2010.

1 **Options for Acquiring AMI Services and Technologies**

2 **Q. DID TNMP INDICATE A FAMILIARITY WITH USING OUTSOURCING OR**
3 **GROUP PURCHASING AS A MEANS OF REDUCING THE COSTS OF BACK-**
4 **OFFICE SYSTEMS OR OTHER AMS COSTS?**

5 A. No (ATM 4-13).

6
7 **Q. ARE THERE FIRMS WHICH PROVIDE BACK-OFFICE AND OTHER AMI**
8 **RELATED SERVICES TO UTILITIES?**

9 A. Yes. For example, Capgemini¹³ and Accenture¹⁴ each offer utilities back-office and other
10 AMI-related services.

11 **Q. ARE THERE ORGANIZATIONS WHICH PROVIDE SMALLER UTILITIES**
12 **ADVICE AND PURCHASING POWER IN ACQUIRING AMI SERVICES AND**
13 **TECHNOLOGIES?**

14 A. Yes. Various organizations provide smaller utilities advice and purchasing power in
15 acquiring AMI services and technologies. The National Information Solutions
16 Cooperative (NISC) provides back-office systems including Meter Data Management
17 System, billing, accounting, mapping, outage management and web interconnection¹⁵.
18 The National Rural Telecommunications Cooperative (NRTC) has relationships with
19 various AMI technology vendors. They offer meters, communication technologies
20 (power line carrier, radio frequency system) and distribution automation¹⁶.

¹³ At www.uk.capgemini.com/services-and-solutions/gsl/ses.

¹⁴ At www.accenture.com/us-en/industry/utilities/smart-grid.

¹⁵ At www.nisc.coop

¹⁶ At www.nrtc.coop

1 **4. Analysis of TNMP Estimated Savings and Service Improvements**

2 **Q. HAS TNMP PROVIDED ESTIMATES OF SAVINGS FOR EACH OF THE SIX**
3 **CATEGORIES IDENTIFIED BY THE COMMISSION?**

4 A. No. The Commission has identified six categories of benefits that it expects utilities like
5 TNMP to achieve from the deployment of AMI¹⁷. They are:

- 6 1. Utility operational savings (remote meter reading)
- 7 2. Automatic outage notification
- 8 3. Faster transactions, Better Customer Service (move-in, move-out, switching REPs)
- 9 4. Meter tampering alert
- 10 5. Demand response and reliability
- 11 6. Shifting load to off-peak hours

12 TNMP has estimated savings for two categories, utility operational savings (remote meter
13 reading) and faster transactions.

14 **Q. WHAT DOES YOUR ANALYSIS REVEAL ABOUT TNMP’S ESTIMATES OF**
15 **THOSE TWO CATEGORIES OF SAVINGS?**

16 A. As noted earlier, TNMP has estimated savings in meter reading and meter operations.
17 TNMP’s estimated savings in meter reading, expressed as savings in meter reading per
18 installed meter, is approximately ****Begin Confidential ** ***** **End**
19 **Confidential **** less than those of AEP but approximately the same as those of Oncor
20 and CenterPoint. TNMP’s estimated savings in meter reading plus meter operations are
21 in the middle of the range of the three other utilities for which I have public detailed
22 estimates. Those comparisons are presented in Exhibit JRH-5.

¹⁷A Report on Advanced Metering as Required by House Bill 2129, Public Utility Commission of Texas, September 2010, page 33

1 Implementation of AMS provides TNMP the potential to realize savings in its
2 distribution system asset management based upon more accurate load data. TNMP did
3 not estimate savings in this area because it felt there is insufficient data available upon
4 which to base an estimate (ATM 1-31f, 4-3). Other utilities for which I have estimates
5 project modest savings in this area.

6 **Q. WHAT ARE TNMP'S OPTIONS FOR REFLECTING SAVINGS IN METER**
7 **OPERATIONS AND DISTRIBUTION ASSET MANAGEMENT IN ITS RATES?**

8 A. TNMP has reflected its estimated meter reading savings in the net AMS revenue
9 requirements underlying its proposed AMS surcharge. TNMP could reflect savings in
10 meter operations and distribution asset management in its rates using some combination
11 of the following three options. First, TNMP could estimate savings in those areas in this
12 proceeding and revise its proposed AMS surcharge downward accordingly. Second,
13 TNMP could reflect savings in those areas in a future AMS surcharge reconciliation
14 proceeding. Third, once TNMP has deployed its AMS system-wide it could file a general
15 rate case to reset its base rates to reflect these savings (ATM 1-32).

16 **IV. ANALYSIS OF PROPOSED AMS SURCHARGE**

17 **Q. PLEASE SUMMARIZE THE COMPANY'S PROPOSED AMS SURCHARGE.**

18 A. The Company proposes to recover the AMS revenue requirements from all rate classes
19 through a new AMS surcharge that would operate independent of base rates. The
20 proposed surcharge is designed as a charge per meter per month which would be in effect
21 for two periods, or tiers, over 12 years from July 2011 through June 2023. The proposed
22 surcharge for residential customers is \$3.76 per meter per month for both the first-tier and
23 second-tier periods.

1 **Q. PLEASE SUMMARIZE YOUR CONCERNS WITH TNMP'S PROPOSED AMS**
2 **SURCHARGES.**

3 A. I have two basic concerns with TNMP's proposed AMS surcharges. First, the surcharges
4 are not reasonable because the AMS revenue requirements they are designed to collect
5 are not reasonable. Second, the Company has not committed to file a general rate case
6 after its AMS is fully deployed in order to reflect any benefits of that deployment in its
7 base rates.

8 **1. AMS Surcharge Levels**

9 **Q. HAS TNMP COMPARED ITS PROPOSED RESIDENTIAL AMS SURCHARGE**
10 **TO THOSE OF THE OTHER TEXAS UTILITIES?**

11 A. Yes. Mr. Whitehurst compares TNMP's proposed residential AMS surcharge to those of
12 the other Texas utilities on page 3 of his Supplemental Direct Testimony. He maintains
13 that the AMS surcharge should be viewed as comparable considering TNMP's "smaller
14 footprint".

15 **Q. PLEASE COMMENT ON TNMP'S COMPARISON OF ITS PROPOSED**
16 **RESIDENTIAL AMS SURCHARGE TO THOSE OF THE OTHER TEXAS**
17 **UTILITIES.**

18 A. TNMP's comparison of its proposed residential AMS surcharge to those of the other
19 Texas utilities is misleading. First, the residential surcharges in the comparison do not
20 provide an accurate indication of the total amounts that each of the utilities would collect
21 from residential customers under their respective surcharges.

1 Those amounts are calculated in Exhibit JRH-6 and summarized in the table below.

CenterPoint	Oncor	AEP TNC	TNMP
\$ 444	\$ 292	\$ 339	\$ 541

2 Second, the TNMP comparison does not recognize the fact that the other Texas utilities
3 may reduce their AMS surcharges in the future to reflect savings in meter operations and
4 distribution system asset management. The bottom line is that the residential AMS
5 surcharge TNMP is proposing would be the highest in Texas and one of the highest
6 residential AMS surcharges in the country.

7 **2. General rate case after system-wide deployment**

8 **Q. HAS TNMP COMMITTED TO FILING A GENERAL RATE CASE ONCE IT**
9 **HAS DEPLOYED THE AMS SYSTEM WIDE?**

10 A. No. TNMP has not committed to filing a general rate case once it has deployed the AMS
11 system wide (ATM 4-5).

12 **Q. WHY SHOULD THE COMMISSION REQUIRE TNMP TO FILE A GENERAL**
13 **RATE CASE ONCE THE COMPANY IS OPERATING THE AMS SYSTEM**
14 **WIDE?**

15 A. TNMP should be required to file a general rate case after one year of experience
16 operating the AMS system wide in order to roll the AMS surcharge into base rates and to
17 reflect any additional savings it is realizing from the AMS in base rates. The base rate
18 filing will provide TNMP the opportunity to reflect savings in distribution asset
19 management and any other areas of its operations. (ATM 1-39, 1-47). In addition this
20 filing will provide TNMP the opportunity to reflect an investment in an OMS in its
21 proposed revenue requirements, if it decides to make such an investment.

1 That one year of experience would serve as the “test year” for its base rate filing.
2 That filing would reflect the impact of the AMS on all of its test year costs, and thereby
3 provide TNMP the opportunity to reflect any additional savings it is realizing from the
4 AMS in base rates. By incorporating AMS costs and savings in base rates TNMP will be
5 able to eliminate the AMS surcharge on a going forward basis. In addition, incorporating
6 AMS costs and savings in base rates will provide a fair sharing of risk associated with the
7 AMS between TNMP shareholders and its customers.

8 **Q. WHY IS A GENERAL RATE CASE PREFERABLE TO AN AMS SURCHARGE**
9 **RECONCILIATION PROCEEDING FOR THESE COMPREHENSIVE RATE**
10 **ADJUSTMENTS?**

11 A. A general rate case is preferable to an AMS surcharge reconciliation proceeding for these
12 comprehensive rate adjustments because it provides the scope and time required to
13 analyze the changes that are necessary. AMS surcharge reconciliation proceedings are
14 fine for fairly narrow adjustments but a general rate case is required for a full assessment
15 of the impact of the AMS on the Company’s total operations.

16 **Q. WHY SHOULD TNMP BE REQUIRED TO BEAR A PORTION OF THE**
17 **FINANCIAL RISK ASSOCIATED WITH THE AMS?**

18 A. TNMP should be required to bear a portion of the financial risk associated with the AMS
19 consistent with generally accepted ratemaking principles. TNMP’s investment in AMS is
20 no different than any of its other investments in its distribution system.

21 **Q. ARE YOU AWARE OF OTHER UTILITIES WITH AMS PROJECTS THAT**
22 **HAVE EITHER PROPOSED, OR BEEN REQUIRED TO, FILE RATE CASES**
23 **AFTER THEY COMPLETE THE DEPLOYMENT OF THEIR PROJECTS?**

24 A. Yes. Potomac Electric in Maryland and Oklahoma Gas and Electric in Arkansas each
25 proposed filing a base rate case once they had completed system-wide deployment of
26 their AMI projects. The Maryland Public Utility Commission required Baltimore Gas

1 and Electric to file a base rate case once it completes system-wide deployment of its AMI
2 project.

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

4 A. Yes.

LIST OF EXHIBITS

Exhibit JRH-1	Resume of James Richard Hornby
Exhibit JRH-2	Texas-New Mexico Power AMS – Gross Revenue Requirements versus Distribution Service Savings (\$ million)
Exhibit JRH-3	Capital and Total Operating Cost of AMS projects (\$per installed meter) – TNMP versus other Texas utilities
Exhibit JRH-4	O&M Costs in TNMP AMS revenue requirements
Exhibit JRH-5	Reductions in Distribution Service Costs (\$ per installed meter) - TNMP versus other utilities
Exhibit JRH-6	Residential AMS charges
Exhibit JRH-7	TNMP Responses to Selected Data Requests

James Richard Hornby

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA.

Senior Consultant, 2006 to present.

Provides analysis and expert testimony regarding planning, market structure, ratemaking and supply contracting issues in the electricity and natural gas industries.

Charles River Associates (formerly Tabors Caramanis & Associates), Cambridge, MA.

Principal, 2004-2006, *Senior Consultant*, 1998-2004.

Provided expert testimony and litigation support in energy contract price arbitration proceedings and various utility ratemaking proceedings. Managed a major productivity improvement and planning project for two electric distribution companies in Abu Dhabi. Analyzed a range of market structure and contracting issues in wholesale electricity markets.

Tellus Institute, Boston, MA.

Vice President and Director of Energy Group, 1997-1998.

Presented expert testimony on rates for unbundled retail services in restructured retail markets and analyzed the options for purchasing electricity and gas in those markets.

Manager of Natural Gas Program, 1986-1997.

Prepared testimony and reports on a range of gas industry issues including market structure, unbundled services, ratemaking, strategic planning, market analyses, and supply planning.

Nova Scotia Department of Mines and Energy, Halifax, Canada.

Member, Canada-Nova Scotia Offshore Oil and Gas Board, 1983-1986.

Member of a federal-provincial board responsible for regulating petroleum industry exploration and development activity offshore Nova Scotia.

Assistant Deputy Minister of Energy 1983-1986.

Responsible for analysis and implementation of provincial energy policies and programs, as well as for Energy Division budget and staff. Directed preparation of comprehensive energy plan emphasizing energy efficiency and use of provincial energy resources. Senior technical advisor on provincial team responsible for negotiating and implementing a federal/provincial fiscal, regulatory, and legislative regime to govern offshore oil and gas. Also served as Director of Energy Resources (1982-1983) and Assistant to the Deputy Minister. (1981-1982)

Nova Scotia Research Foundation, Dartmouth, Canada, *Consultant*, 1978-1981.

Canadian Keyes Fibre, Hantsport, Canada, *Project Engineer*, 1975-1977.

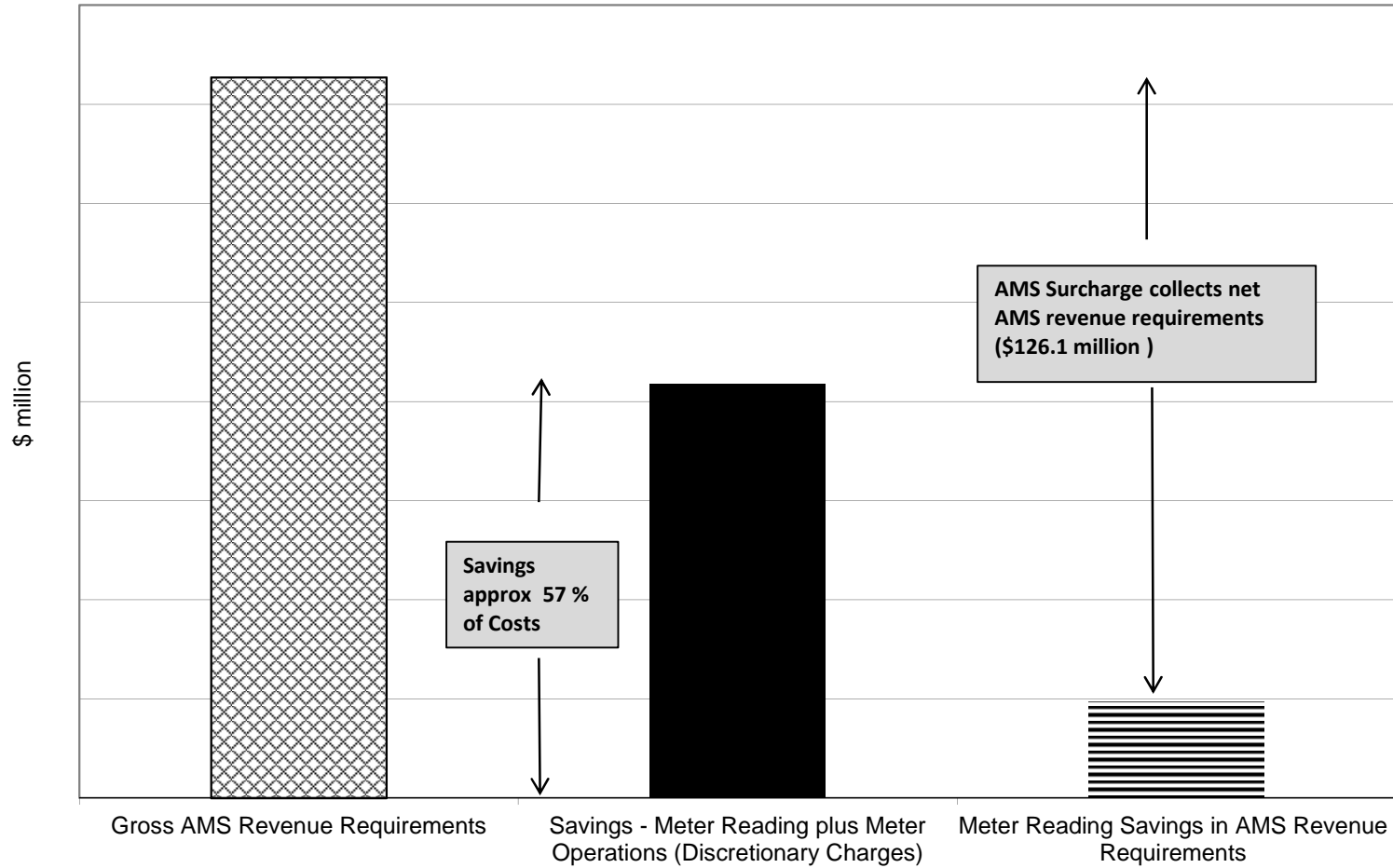
Imperial Group Limited, Bristol, England, *Management Consultant*, 1973-1975.

EDUCATION

M.S., Technology and Policy (Energy), Massachusetts Institute of Technology, 1979.

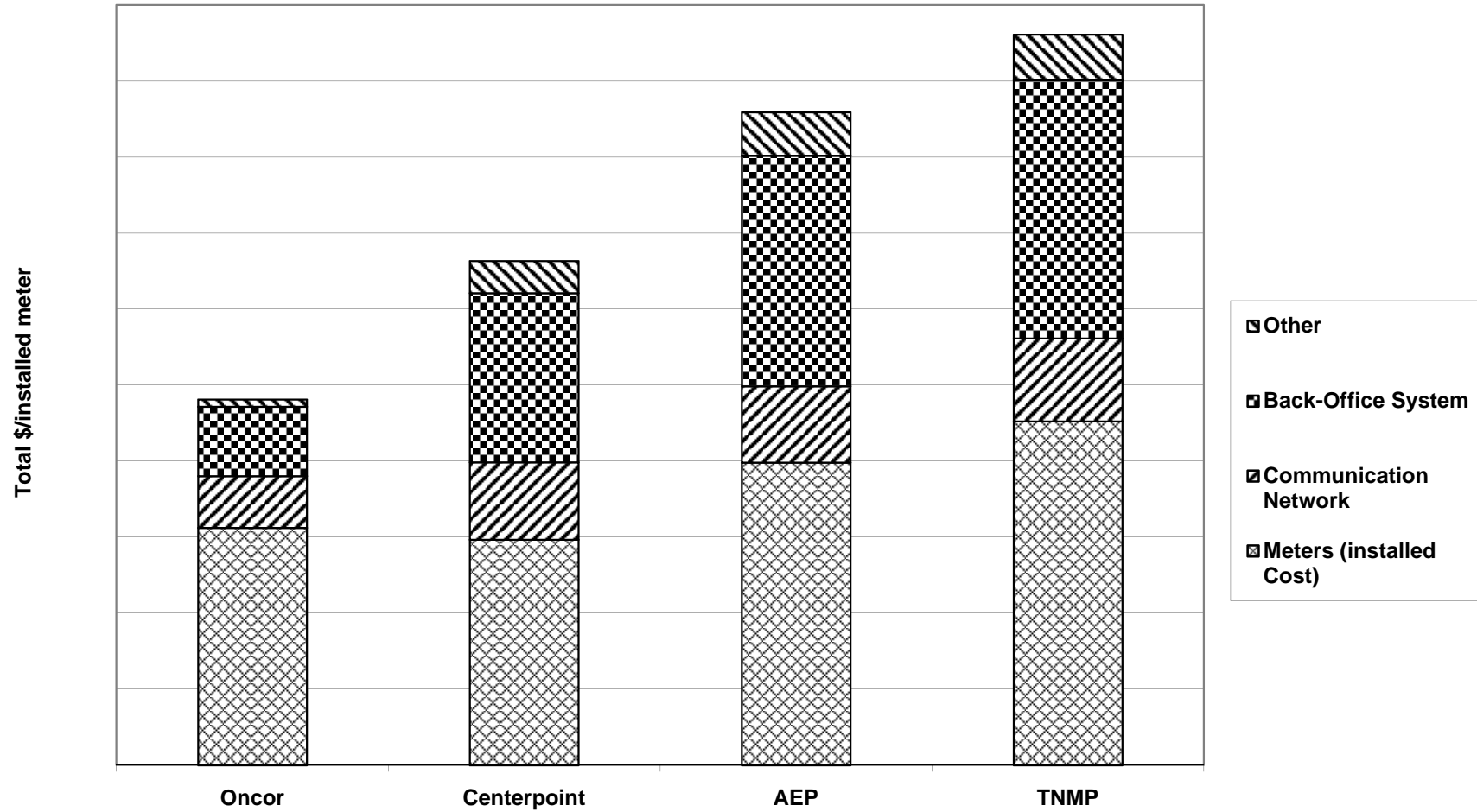
B.Eng., Industrial Engineering (with Distinction), Dalhousie University, Canada, 1973.

Texas-New Mexico Power AMS – Gross Revenue Requirements versus Distribution Service Savings (\$ million)



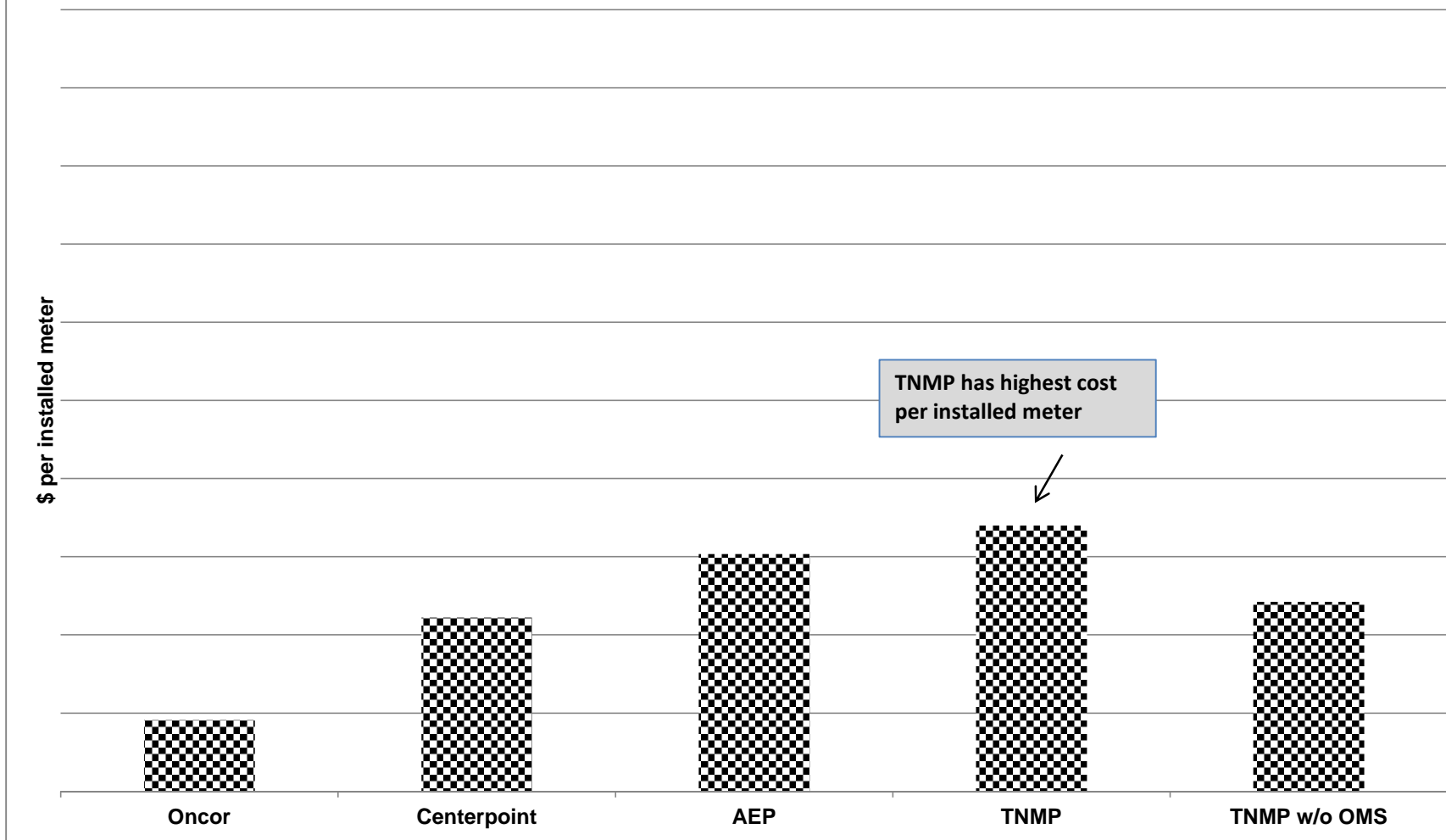
Capital and Total Operating Cost of AMS projects (\$ per installed meter)

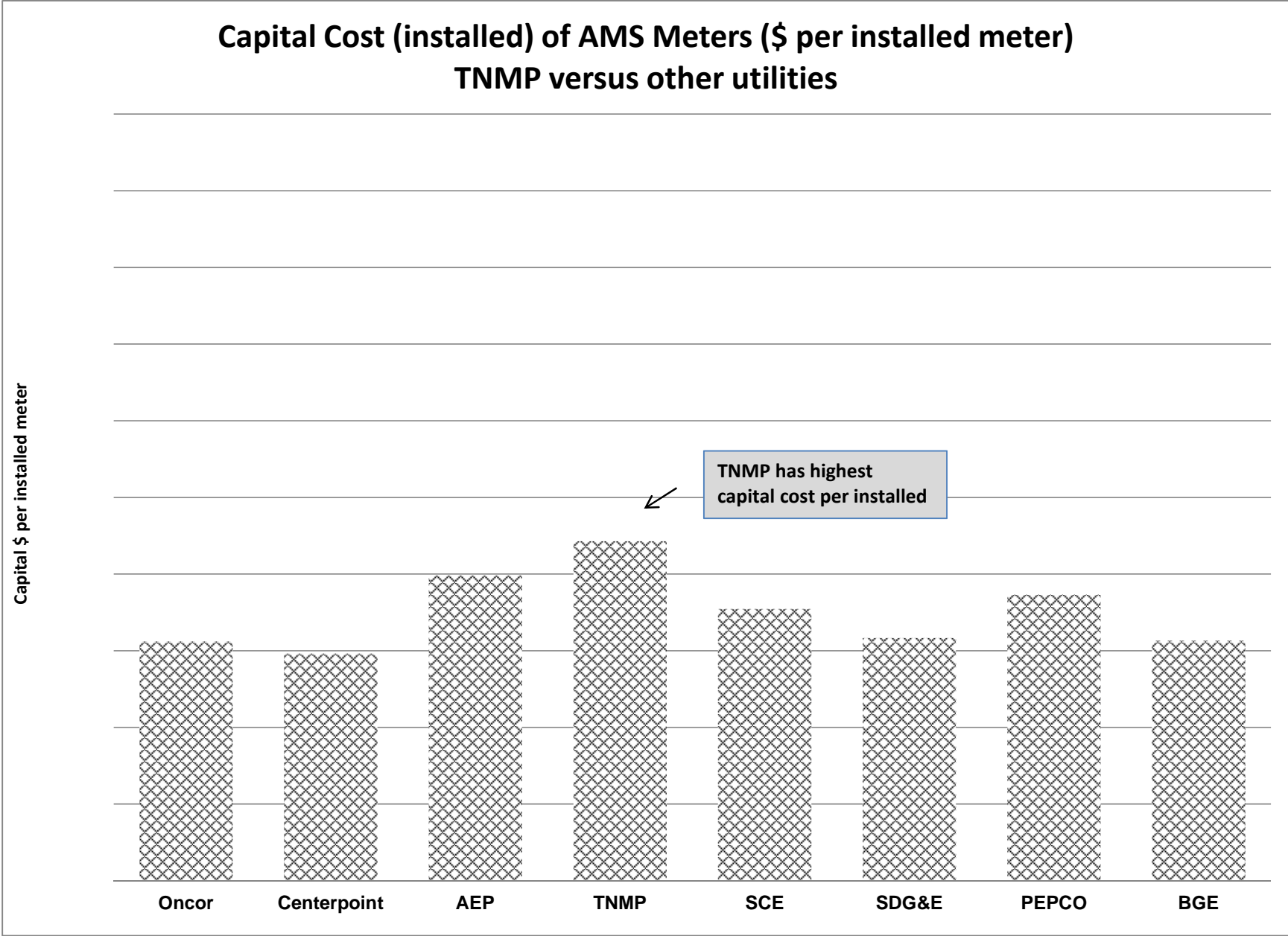
TNMP versus other Texas utilities



Capital and Total Operating Cost of Back-Office Systems in AMS projects (\$ per installed meter)

TNMP versus other Texas utilities





Source: Exhibit JRH-3, page 4

Capital and Total O&M Costs of AMS Projects (\$ per installed meter) - TNMP versus other utilities

Confidential Data is Bold and Shaded

SECTION 1 - TNMP AMS Revenue Requirements from surcharge tab, Exhibit SRW-S-1

a	Net AMS revenue requirements (Total Surcharge) (1)	\$ 126,120,825
b	Total O&M benefits (meter reading) (1)	
c = a - b	Gross AMS revenue requirements	
d	Annual reduction in meter operations (2)	

SECTION 2 - Capital plus total O&M costs of AMI projects

Utility	TNMP (3)	AEP (4)	Centerpoint (5)	Oncor (6)	SCE (7)	SDG&E (7)	PEPCO (7)	BGE (7)
State	TX	TX	TX	TX	CA	CA	MD	MD
1 Data - Projected or Actual, Year	P. 2010	P. 2010	P. 2006	P. 2008			P. 2009	P. 2009
2 Regulatory Commission Approval (Yes/No)	application	Y	Y	Y	Y	Y	N	N
A. Service territory								
3 # meters (million)	0.24	1.0	2.4	3.4	5.3	2.3	0.57	2.1
3A Service territory (square miles)	10000	97000	5000	27000				
3B meter density (meters per sq mile)	24	10	480	126				
B. Absolute costs : Capital plus total O&M (million \$)								
4 In Home Devices								
5 Meters (installed Cost) (8)		\$ 199.1	\$ 355.8	\$ 530.8	\$ 939.5	\$ 364.0	\$ 106.4	\$ 328.8
6 Communication Network		\$ 50.1	\$ 122.5	\$ 115.5				
7 Back Office System		\$ 151.8	\$ 266.8	\$ 154.8				
8 Other (In-Home Devices, Customer Interfaces, System Man		\$ 28.5	\$ 51.0	\$ 16.0				
9								
10 = Sum 4 to 9 Total	\$ -	\$ 429.5	\$ 796.1	\$ 817.1				
C. Unit costs: Capital plus total O&M (\$ per installed meter)								
14 = 4 / 3 In Home Devices	\$ -	\$ -	\$ -	\$ -				
15 = 5 / 3 Meters (installed Cost) (8)	\$ -	\$ 199	\$ 148	\$ 156	\$ 177	\$ 158	\$ 187	\$ 157
16 = 6 / 3 Communication Network	\$ -	\$ 50	\$ 51	\$ 34				
17 = 7 / 3 Back Office System	\$ -	\$ 152	\$ 111	\$ 46				
18 = 8 / 3 Other (In-Home Devices, Customer Interfaces, System Ma	\$ -	\$ 28	\$ 21	\$ 5				
19	\$ 0	\$ -	\$ -	\$ -				
20 = Sum 14 to 19 Total	\$ -	\$ 429	\$ 332	\$ 240				
D. Absolute Reductions in Distribution Service Service Costs (\$ million)								
meter reading		\$ 121.8	\$ 120.6	\$ 204.0				
meter operations								
distribution system asset management								
Total	\$ 0.0	122	121	204				
E. Unit Reductions in Distribution Service Service Costs (\$ per meter)								
meter reading		\$ 122	\$ 50	\$ 60				
meter operations								
distribution system asset management								
Total	\$	122	\$ 50	\$ 60				

Sources / Notes	1	surcharge tab, Exhibit SRW-S-1
	2	Response Cities LK 1 -7
	3	TNMP notes tab in Final conf workbook Exh JRH 2 and 3.xls
	4	AEP notes tab in Final conf workbook Exh JRH 2 and 3.xls
	5	Centerpoint notes tab in Final conf workbook Exh JRH 2 and 3.xls
	6	ONCOR notes tab in Final conf workbook Exh JRH 2 and 3.xls
	7	Synapse database
	8	Capital portion of TNMP meter cost is \$53.7 million

OMS Costs within TNMP AMS revenue requirements

Total AMS Revenue Requirements	Source	Amount (\$)
A. as filed	Exhibit SRW-S-1, <i>surcharge</i> worksheet	\$ 126,120, 825
B. without OMS costs	Exhibit JRH-4, page 2	
C. OMS component	A - B	

OMS inputs removed from Exhibit SRW-S-1 (TNMP Revenue Requirement model) to calculate revenue requirements without OMS costs

INPUTS REMOVED	
Worksheet	Description, Row
CapitalITand Implemen	OMS hardware Server 54
	OMS Back-Office Work 72
	OMS Installation & training 73
	Product Maintenance OMS 76
	Outage management software 88
O&MCost	Product Maintenance O&M 44
	System Operators 82

Residential AMS Charges

AMS metering charge (\$ per meter per month)	TNMP (1)	AEP (2)		Centerpoint (3)	Oncor (4)
		TNC	TCC		
Period 1	\$ 3.76	\$ 3.15	\$ 3.15	3.24	2.21
Period 2	\$ 3.76	\$ 2.77	\$ 2.89	3.05	
Period 3	\$ -	\$ 2.35	\$ 2.26		
Surcharge periods					
Period 1	54	24	24	24	132
Period 2	90	24	24	120	
Period 3	0	84	84		
Total months	144	132	132	144	132
Total Years	12	11	11	12	11
Total Collected per Meter					
Period 1	\$ 203	\$ 76	\$ 76	\$ 78	\$ 292
Period 2	\$ 338	\$ 66	\$ 69	\$ 366	\$ -
Period 3	\$ -	\$ 197	\$ 190	\$ -	\$ -
Total	\$ 541	\$ 339	\$ 335	\$ 444	\$ 292

Sources

- 1 TNMP notes tab in Final conf workbook Exh JRH 2 and 3.xls
- 2 AEP notes tab in Final conf workbook Exh JRH 2 and 3.xls
- 3 Centerpoint notes tab in Final conf workbook Exh JRH 2 and 3.xls
- 4 ONCOR notes tab in Final conf workbook Exh JRH 2 and 3.xls

TNMP Responses to Data Requests

ATM 1-1
ATM 1-4
ATM 1-6
ATM 1-14
ATM 1-22
ATM 1-24
ATM 1-26
ATM 1-31
ATM 1-32
ATM 1-39
ATM 1-47
ATM 1-50
ATM 2-16
ATM 2-19
ATM 3-6
ATM 3-8
ATM 3-9
ATM 3-22
ATM 4-3
ATM 4-5
ATM 4-9
ATM 4-13
ATM 7-3
ATM 7-4

CITIES LK 1-7
CITIES LK 1-8
CITIES LK 1-9
CITIES LK 1-12
CITIES LK 3-1
CITIES LK 3-2
CITIES LK3-22

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM'S FIRST REQUEST FOR INFORMATION
QUESTIONS ATM1-1 THROUGH ATM1-60**

- a. See TNMP TXAMS 004 Highly Confidential and Highly Sensitive DoE Filing package.zip.
- b. See page 4 of Mr. Whitehurst's Direct Testimony. Mr. Whitehurst has not performed a reconciliation.
- c. TNMP has not performed any analysis of all the major savings from a Smart Grid. TNMP did identify some savings in the Department of Energy application. See TNMP TXAMS 004 Highly Confidential and Highly Sensitive DoE Filing package.zip.
- d. TNMP's application is a request for approval of a deployment plan and a request for a surcharge. P.U.C. SUBST. R. 25.130 allows for recovery of an Advanced Metering System through an AMS surcharge. Neither the Commission rules, nor PURA, contemplate the recovery of "Smart Grid costs" in the AMS surcharge.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM'S FIRST REQUEST FOR INFORMATION
QUESTIONS ATM1-1 THROUGH ATM1-60**

ATM1-4 **Pre-Filed Direct Testimony of Mr. Whitehurst, page 7, lines 5 to 10.**

- a. Please provide all analyses and internal documents underlying the decision by TNMP to choose a public cellular communication system rather than to build its own communications infrastructure;**
- b. Please describe the level of expense the Company considers to be "prohibitively expensive" and its criteria for making that determination.**

RESPONSE

Prepared by: Gary Kessler
Sponsor: Stacy Whitehurst
Attachment: None

- a. See TNMP's response to ATM1-14 and ATM 1-22.

Also please review the following sections of Mr. Kessler's testimony.

Page 4, Lines 13-23

Page 22, Lines 24-27

Page 27, Lines 26-29

Page 28, Lines 1-21

Page 29, Lines 4-18

Exhibit GLK-4; AMS communications Non-Coverage areas

Exhibit GLK-8; SMARTSYNCH CASE STUDIES

- b. TNMP defines "prohibitively expensive" as the inability to provide a cost effective, secure, and reliable AMS network. In order to be cost effective, TNMP sought to keep the cost for the residential surcharged amount at approximately \$5.00 per month per residential ESI ID, which is below the maximum existing metering charges for the TDSPs in ERCOT; AEP TNC's approved metering charge is \$5.24. For security criteria, see the Direct Testimony of Gary Kessler, Pages 14-22. For reliability criteria,

**TEXAS-NEW MEXICO POWER COMPANY'S
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since TNMP is in a hurricane prone territory, TNMP sought a solution that would allow TNMP to focus on its core business operations (transmission and distribution of electricity) instead of rebuilding communications networks.

The proposed AMS system utilizes a managed cellular network that is preexisting. TNMP proposes to use preexisting networks for the following reasons:

- The spectrum is managed by the carrier – i.e. it can only be used in a manner determined by the carrier and usage, intrusion and interference are closely managed by the carrier.
- Network access is tightly managed and uses secure methods, so unauthorized access to the network is difficult and monitored
- Maintenance, management, security and reliability are central to the success of the carrier and its profitability.
- TNMP will have Service Level Agreements with the carrier to guarantee agreed upon performance
- The spectrum is owned and not subject to change.

In fact, the unmanaged public spectrum, which most AMI systems are currently using, has none of the above attributes. It is important to note that the majority of the current AMI deployments in Texas use cellular as the “backhaul” for their AMI systems. Since metering is the “cashbox” for the utility, TNMP finds the following attributes of public spectrum unacceptable for metering:

- Spectrum is unmanaged and shared with many others. This leads to congestion and security breaches.

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- Radio Interference is unmonitored and unregulated.
- Security is haphazard and access to the spectrum is widely available.
- Technology to build devices that operate on public spectrum is widely available which allows anyone to monitor AMS communications.
- FCC provides few guidelines to usage and all are unenforced.
- Spectrum availability is determined by the FCC.

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ATM1-6

Pre-Filed Direct Testimony of Mr. Whitehurst, page 8, lines 1 to 3:

- a. Please explain why the proposed deployment of AMS is outside TNMP's normal distribution budget;**
- b. Would TNMP deploy AMS in the absence of its ability to request cost recovery through the surcharge allowed under PUC Rule 25.130 (k). Please explain why or why not.**

RESPONSE

Prepared by: Stacy Whitehurst

Sponsor: Stacy Whitehurst

Attachment: None

- a. AMS deployment is not mandatory, unless required by the Commission. TNMP currently is not earning its authorized return, and has publically stated that it will file a general rate proceeding.
- b. TNMP is unable to answer this question since P.U.C. SUBST. R. 25.130(k) is required by the law passed in 2005, and TNMP's analysis is based on current laws and Commission rules, and not hypothetical.

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ATM1-14

Pre-Filed Direct Testimony of Mr. Kessler, pages 2 and 3:

- a. **Did TNMP evaluate one or an alternative approaches to its proposed AMS? If so please provide that evaluation. If not, please explain why not.**
- b. **Did TNMP evaluate an alternative approach to its proposed AMS under which it would upgrade the functionality of its existing meters, meter reading system and communication system to achieve the key functionalities identified in PUC Rule 25.130 at lower costs and seek waivers for the others? If so, please provide that evaluation. If not, please explain why not.**

RESPONSE

Prepared by: Gary Kessler

Sponsor: Gary Kessler

Attachment: None

- a. TNMP evaluated a PLC AMS system. No formal documentation exists on the evaluation.
- b. TNMP issued an RFP for an AMS system the meet the functionalities described in P.U.C. SUBST. R. 25.130. TNMP ONLY evaluated those systems and selected the lowest cost system that meet ALL functionalities and was based on recommended NIST and industry standards.

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ATM1-22 **Pre-Filed Direct Testimony of Mr. Kessler, page 4, lines 13 to 23.**

Please identify the Texas utilities with a customer density less than 23 meters per square mile and the communications approach chosen by those utilities.

RESPONSE Prepared by: Gary Kessler
 Sponsor: Gary Kessler
 Attachment: None

All utilities will have different demographics, business case constraints, and service territory geography which drive application requirements for AMS systems and AMS communications networks. As such, it is not prudent for TNMP to draw conclusions about communications requirements from other utilities whose customer density may be the same or lower than TNMP's.

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QUESTIONS ATM1-1 THROUGH ATM1-60**

ATM1-24 **Pre-Filed Direct Testimony of Mr. Kessler, page 25.**

Please provide all analyses prepared by or for TNMP of the costs of alternative communication system approaches.

RESPONSE Prepared by: Gary Kessler
 Sponsor: Gary Kessler
 Attachment: None

The AMS communications network selection was based on an RFP as described in my testimony, Page 27, Lines 16-22. Only the cost of communications systems associated with vendors who responded to the RFP were evaluated. Those costs are based on proprietary vendor pricing that is protected under a non-disclosure agreement with TNMP. TNMP selected the lowest cost solution based on the requirements outlined on Page 27, Lines 24-29; Page 28, Lines 1-21, and Page 29, Lines 1-2.

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ATM1-26 Pre-Filed Direct Testimony of Mr. Burke, page 4, lines 1 to 5:

- a. Please provide all analyses prepared by or for TNMP of the savings in electricity supply costs its residential customers could achieve due to the deployment of AMS.**
- b. Please identify the specific REPs serving its residential customers who the Company expects to offer new pricing, efficiency and demand response products and the basis for that expectation.**
- c. Please identify the percentage of its residential customers the Company expects to participate in new pricing, efficiency and demand response products offered by REPs and the basis for that expectation.**

TNMP objects to this request to the extent it seeks TNMP customer information, which is confidential and proprietary and may not be disclosed without customer consent.

Subject to the foregoing objections, and without waiving same, TNMP responds as follows:

RESPONSE Prepared by: Allan Burke
 Sponsor: Allan Burke
 Attachment: None

- c. No analysis was conducted. Potential savings for customers could be achieved if Retail Electric Providers use the advantages created by AMS for creative pricing offers, including demand response.
- d. TNMP is not aware of any specific REPs. However, even if the specific REPs were known, that information would be confidential.
- e. Unknown. It is up to REPs operating in the TNMP service territory to offer these programs

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QUESTIONS ATM1-1 THROUGH ATM1-60**

ATM1-31 **Pre-Filed Direct Testimony of Mr. Burke, page 4, line 28 through page 5 line 12:**

- a. Please provide all analyses prepared by or for the Company of the potential savings in distribution service revenue requirements from its proposed AMS deployment. If the Company has not prepared any analyses please explain why not?**
- b. Please provide the cost of service study the Company filed in its most recent rate case.**
- c. Please confirm that the \$1.9 million for meter reading expenses was booked to account 902.**
- d. Please identify the test year level of distribution system meter operations and maintenance expenses.**
- e. Please explain why the Company does not expect to achieve any reductions in its distribution system meter operations meter operations and maintenance expenses.**
- f. Please provide all analyses prepared by or for the Company of the reductions it will achieve in distribution, substation and transmission planning and capital investments from the deployment of AMS. If no analyses were prepared please explain why not.**

The information responsive to this request constitutes HIGHLY SENSITIVE PROTECTED MATERIAL under the terms of the Protective Order issued in Docket No. 38306. The information consists of commercially sensitive financial and business operations projections for Texas-New Mexico Power Company. Counsel for TNMP has reviewed the information sufficiently to state in good faith that this information merits this designation, and that it contains confidential business information and commercially sensitive financial and business operations information that is exempt from public disclosure under the Public Information Act, TEX. GOV'T CODE §§ 552.101 and 552.110.

RESPONSE Prepared by: Stacy Whitehurst
 Sponsor: Stacy Whitehurst

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Attachment: TNMP-TXAMS 004 Highly Confidential and Highly Sensitive DoE Filing Package.zip; also, see TNMP response to LK1-7 TNMP-TXAMS 003_Highly Sensitive TNMP Discretionary Fee

- a. See TNMP-TXAMS 004 Highly Confidential and Highly Sensitive DoE Filing Package.zip.
- b. The items are publically available on the PUC's Interchange website under Docket No. 36025 in native format.
- c. See schedule II-D-1 O&M from Docket No. 36025, which is publically available on the Commission's Interchange website in native format.
- d. Please see TNMP's response to LK1- 8 and LK1-9.
- e. Please see TNMP's response to LK1- 8 and LK1-9.
- f. No analysis was performed due to lack of accurate data which will be obtained through AMS implementation.

**TEXAS-NEW MEXICO POWER COMPANY'S
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ATM1-32 **Pre-Filed Direct Testimony of Mr. Burke, pages 5 and 6.**

Please describe the rate mechanism(s) through which reductions in costs currently being recovered in base rates will be credited to ratepayers.

RESPONSE Prepared by: Allan Burke
 Sponsor: Allan Burke
 Attachment: None

Costs that will be either reduced or eliminated with the implementation of an AMS system are credited to customers within the calculation of the AMS surcharge. See Mr. Montgomery's Direct Testimony, Confidential Exhibit MDM-2 (McKinsey - AMS Surcharge) for more detail. The only exception is the reduction in discretionary fee revenues which are impacted by AMS meter installations (move-in, move-out, connect, disconnect, off-cycle reads, etc.). The reduction in fees will be reflected in TNMP's next general rate case.

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QUESTIONS ATM1-1 THROUGH ATM1-60**

ATM1-39 **Pre-Filed Direct Testimony of Kimberly Morris, pages 4 and 5.**
Please describe the rate mechanism(s) through which reductions in O&M costs currently being recovered in base rates will be credited to ratepayers.

RESPONSE Prepared by: Austin Rosel
 Sponsor: Michael Montgomery
 Attachment: None

Please see TNMP's response to ATM1-32.

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QUESTIONS ATM1-1 THROUGH ATM1-60**

ATM1-47 **Pre-Filed Direct Testimony of Mr. Monroy, pages 7 and 8.**

Please describe the rate mechanism(s) through which reductions in O&M costs currently being recovered in base rates will be credited to ratepayers.

RESPONSE Prepared by: Austin Rosel
 Sponsor: Michael Montgomery
 Attachment: None

Please see TNMP's response to ATM1-32.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM'S FIRST REQUEST FOR INFORMATION
QUESTIONS ATM1-1 THROUGH ATM1-60**

ATM1-50 **Pre-Filed Direct Testimony of Mr. Montgomery, page 2 lines 28 to 30:**

- a. Does Mr. Montgomery agree that TNMP has an obligation to provide reliable service at reasonable rates? If not, why not?**
- b. Does Mr. Montgomery agree that the determination of whether a cost-benefit analysis is, or is not, necessary is a matter for legal interpretation? If not, why not?**
- c. Please provide the determination by the Texas legislature that there are benefits to TNMP ratepayers of TNMP's specific proposed AMS deployment.**
- d. Please provide the Company's cost-benefit analysis of its proposed AMS deployment.**

RESPONSE

Prepared by: Austin Rosel

Sponsor: Michael Montgomery

Attachment: None

- a. Yes, I agree that TNMP, like all other Transmission and Distribution Service Providers in the State of Texas, has a regulatory obligation to provide reliable service at just and reasonable rates.
- b. I cannot answer this question as I am not and have never been a practicing attorney.
- c. I state in my testimony, Page 2, Lines 28 through 30 that the Texas Legislature has determined that there are benefits to deploying advanced metering.
- d. My testimony on Page 2, Lines 28 through 30 does not mention a cost benefit analysis performed by TNMP.

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QUESTIONS ATM2-1 THROUGH ATM2-27**

ATM2-16 Pre-Filed Direct Testimony of Mr. Burke, Page 3 Line 28.

- a. Please explain if the Texas Legislature or PUCT expressly addressed inclusion of outage management capabilities in any of their deliberations concerning deployment of AMS.**
- b. If so, please explain the context of such deliberations.**

TNMP objects to this request to the extent that it is unduly burdensome, overbroad, and seeks explanation of determinations by third party entities, such as the Texas Legislature and the PUC, and those third party entities would be the best source of information responsive to this request. TNMP further objects to this request to the extent it requires the witness to provide a legal conclusion.

Subject to the foregoing objections, and without waiving same, TNMP responds as follows:

RESPONSE Prepared by: Stacy Whitehurst
 Sponsor: Stacy Whitehurst
 Attachment: None.

- a. Yes, both the Texas Legislature and the PUCT have addressed this.
- b. Texas Legislature passed legislation which allows recovery of “meter information networks.” Outage management is information that is sent from the meter. The PUCT addressed this most recently in the Open Meeting on April 1, 2010.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS ATM2-1 THROUGH ATM2-27**

ATM2-19 **Pre-Filed Direct Testimony of Mr. Burke, Page 5 Line 5.**

- a. Please provide a comparison of cost savings to increase costs assuming the Company does not include or implement the proposed outage management system.**
- b. Please provide a list of the incremental costs for implementation of the proposed outage management system versus the benefits seen by customers solely due to the proposed OMS.**

RESPONSE Prepared by: Mike Montgomery

Sponsor: Allan Burke

Attachment: None.

- a. The following chart provides a high level summary of the Outage Management System portion of the total project capital costs. OMS capital costs are approximately 8.3% of the total. Put in another way, the OMS capital costs on a per meter basis are approximately \$24 compared to a total project capital cost of \$293 per meter.
- b. Although TNMP has not performed a specific analysis of the costs for implementation versus the benefits to customers, TNMP has identified benefits including, but not limited to, reduced outage duration (which will increase customer satisfaction) and increased outage crew and dispatch efficiency (since the OMS will provide very specific information as to the possible point of failure) as benefits of an OMS, which TNMP believes will outweigh any additional costs.

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OMS Contribution to Total Capital Costs				
Description	OMS	All Other	Meters, Network, Installation	Total
Software	1,250,000	553,500	-	1,803,500
Server Hardware	400,000	240,000	-	640,000
MDM Complex Billing Software	-	215,000	-	215,000
External Labor-Back Office	1,250,000	2,450,000	-	3,700,000
OMS Installation and Training	750,000	-	-	750,000
Web Portal	-	700,000	-	700,000
Subtotal	3,650,000	4,158,500	-	7,808,500
% of Subtotal	47%	53%	-	100%
Infrastructure Software License	116,860	133,140	-	250,000
Labor BTS Internal	1,285,458	1,464,541.85	-	2,750,000
Totals Before Loadings	5,052,318	5,756,182	-	10,808,500
Project Loading	770,873	878,267	-	1,649,140
Total IT	5,823,191	6,634,449	-	12,457,640
Meters	-	-	53,075,643	53,075,643
Network	-	-	915,800	915,800
Installation	-	-	4,091,230	4,091,230
Total Meters, Network, and Install	-	-	58,082,673	58,082,673
Total Capital Costs	5,823,191	6,634,449	58,082,673	70,540,313
% of Total	8.26%	9.41%	82.34%	100.00%
Per Meter Capital Cost	\$24.22	\$27.60	\$241.60	\$293.42

References:

**TEXAS-NEW MEXICO POWER COMPANY'S
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QUESTIONS ATM2-1 THROUGH ATM2-27**

IT Capital Costs - Morris Exhibit KKM-2

Meter, Network, and Install Costs - Montgomery Confidential Exhibit MDM-2 (McKinsey-ProjecSummary)

IT Project Loadings - Confidential Exhibit MDM-2 (McKinsey - CapitalITAndImple)

Total Meters 240,411

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS ATM 3-1 THROUGH ATM 3-17**

ATM 3-6 Response to ATM 2-16.

Please provide any and all supporting documentation and associated references that supports the statements that the definition of "meter information" includes outage management.

RESPONSE Prepared by: Stacy Whitehurst
 Sponsor: Stacy Whitehurst
 Attachment: None.

P.U.C. SUBST. R. 25.130 (g) (1) (B) requires TNMP's system to support two-way communication and perform remote disconnect and reconnect. As well as registering consumption, the meter provides additional information, such as information on tampering, low battery levels, event logging (disconnection, reconnection, rereads, outages), and audit information. PURA 39.107 states,

“All meter data, including all data generated, provided, or otherwise made available, by advanced meters and meter information networks, shall belong to a customer, including data used to calculate charges for service, historical load data, and any other proprietary customer information.”

Clearly, PURA sees tampering, low battery levels, event logging (disconnection, reconnection, rereads, outages), and audit information as meter data.

See also the current Smart Grid 1.0 score card, which states, “Smart Grid 1.0 (AMS Deployment) is the foundation for which the remaining components of the Smart Grid in Texas will be developed. This is defined as: (1) meeting the minimum requirements contained in the Advanced Metering rule, (2) meeting the requirements of the Final Orders issued in each AMS Deployment and Surcharge

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QUESTIONS ATM 3-1 THROUGH ATM 3-17**

Request proceeding, and (3) meeting the minimum requirements developed by the Advanced Metering Implementation Team for Phase 1.” Phase 1 includes, “Leveraging AMS to improve outage response. Completed integration of the TDU’s Outage Management System and AMS for faster outage response¹.”

See Quanta’s Final Report on Distribution Hardening: Best Practices, which recommends:

“Smart meters. Utilities are increasingly replacing electromechanical meters with digital “smart meters” that have two-way communications. A feature of a typical smart meter is to communicate when it is energized. During storm restoration, this feature is useful. Before a crew leaves an area, it can have all of the smart meters polled to determine whether every customer is actually restored. Doing this has several advantages. First, crews will less frequently have to return to the area to address missed problems. Second, crews can investigate customers that remain interrupted before leaving the area, informing them about why they are still interrupted, and whether they need to call an electrician to fix damage on customer-owned facilities. Last, the utility will have a more accurate count of interrupted customers throughout the restoration process. This recommendation requires utilities to integrate the use of smart meter data in their restoration process.”

Finally, see the PUCT Open Meeting discussion on April 1, 2010.

1

http://www.puc.state.tx.us/electric/projects/34610/AMITMtg062810/SmartGrid_10_DraftScorecard_052410_Staff_Disc_Dft.pdf.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS ATM 3-1 THROUGH ATM 3-17**

ATM 3-8 **Responses ATM 1-1 c and 1-50 d.**

Please explain why TNMP provided a comprehensive estimate of benefits of its Smart Grid project in its application for federal stimulus funds, and a comparison of those benefits to proposed costs, but has not provided a corresponding comprehensive estimate of benefits of its AMS project in this proceeding.

RESPONSE Prepared by: Stacy Whitehurst
Sponsor: Stacy Whitehurst
Attachment: None.

TNMP did provide a comprehensive estimate of benefits in its AMS Surcharge approval application. TNMP used the Commission required McKinsey model, which performs a cost-benefit analysis. TNMP adapted this into a revenue requirements model.

A requirement of the Department of Energy was to file an EPACT Representation For Covered Awards over \$100,000. This required form requested economic and other benefits to be included. TNMP's DoE proposal supported this required representation.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS ATM 3-1 THROUGH ATM 3-17**

ATM 3-9 **Responses ATM 1-1 c, 1-26 a, 1-28 b, 1-52 and 2-19 b.**

Please provide TNMP's estimates of each of the categories of benefits listed below from the AMS project corresponding to TNMP's estimates of Smart Grid project benefits in its application for federal stimulus funds.

Please provide all supporting assumptions and calculations in an operational workbook. If TNMP can not provide these estimates, please explain why it could and did estimate them for the Smart Grid project but can not or did not estimate them for the AMS project.

- a. lower electricity costs,**
- b. lower peak demand costs,**
- c. lower T&D costs,**
- d. lower TNMP O&M costs,**
- e. lower REP O&M costs,**
- f. lower outage costs**
- g. improved power quality**
- h. avoided carbon costs**
- i. lower oil usage.**

TNMP objects to this request to the extent that it is unduly burdensome, overbroad, and seeks information that is neither relevant to the issues presented in this matter nor likely to lead to the discovery of admissible evidence. TNMP further objects to this request to the extent that it requires TNMP to create document(s) not already in existence.

Subject to the foregoing objections, and without waiving same, TNMP responds as follows:

RESPONSE Prepared by: Stacy Whitehurst
 Sponsor: Stacy Whitehurst
 Attachment: None.

TNMP has not created any estimates for this filing.
See response to ATM 3-8.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM' FOURTH REQUEST FOR INFORMATION
QUESTIONS ATM4-1 THROUGH ATM4-27**

ATM4-3

Compliance with P.U.C. SUBST. R. 25.130. Improved asset utilization.

One of the stated purposes of P.U.C. SUBST. R. 25.130 is to authorize electric utilities to assess a non-bypassable surcharge to use to recover costs incurred for deploying advanced metering systems that improve the deployment and operation of generation, transmission and distribution assets.

Please confirm that the Company has not committed to achieving a specific or quantified improvement in the deployment and operation of generation, transmission and distribution assets other than a projected reduction in meter reading costs. If the Company can not confirm this statement please identify the section of its application that describes its commitment to achieving a specific or quantified improvement in the deployment and operation of generation, transmission and distribution assets.

RESPONSE

Prepared by: Allan Burke

Sponsor: Allan Burke

Attachment: None.

TNMP disagrees with the statement, *“One of the stated purposes of P.U.C. Subst. R. 25.130 is to authorize electric utilities to assess a non-bypassable surcharge to use to recover costs incurred for deploying advanced metering systems that improve the deployment and operation of generation, transmission and distribution assets”* In fact, P.U.C. Subst. R. 25.130 lists the multiple purposes of advanced metering, with no stated requirement that the electric utility must quantify their resulting effect.

One of the several reasons TNMP has filed its AMS application is, pursuant to P.U.C. Subst. R. 25.130(a)(4), to achieve specific or quantified improvement in the deployment and operation of generation, transmission, and distribution assets, and provide more choices for the electric customer. As noted above, the rule does not specify that TNMP is required to quantify such improvement. TNMP feels there is insufficient data available at this time to quantify the specifics of such improvement.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM' FOURTH REQUEST FOR INFORMATION
QUESTIONS ATM4-1 THROUGH ATM4-27**

ATM4-5

Compliance with P.U.C. SUBST. R. 25.130. General Base Rate Proceeding.

According to Subsection (k) 4 "If the commission conducts a general base rate proceeding while a surcharge under this section is in effect, then the commission shall include the reasonable and necessary costs of installed AMS equipment in the base rates and decrease the surcharge accordingly, and permit reasonable recovery of any non-AMS metering equipment that has not yet been fully depreciated but has been replaced by the equipment installed under an approved Deployment Plan."

The Company has recently submitted a notice of its intention to file a general base rate case in the near future.

- i. Is the Company planning to include any of its projected AM1 project costs in the revenue requirements of its impending base rate filing? If so, please identify those costs. If not, please explain why not.**
- ii. Will the Company commit to file a general base rate case upon completion of full deployment of its AM1 project? If not, why not.**

RESPONSE

Prepared by: Stacy Whitehurst

Sponsor: Stacy Whitehurst

Attachment: None.

- i. TNMP does not plan to include any of its projected AMS charges in base rates. The rule states that, "*If the commission conducts a general base rate proceeding while a surcharge under this section is in effect...*" TNMP does not view the rule as requiring inclusion of a pending request for surcharge into a rate case.

As stated in TNMP's application and testimony, TNMP requests a surcharge to begin in November 1, 2010, with full deployment beginning in January 2011. PURA establishes a 185-day statutory deadline, therefore any installed

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM' FOURTH REQUEST FOR INFORMATION
QUESTIONS ATM4-1 THROUGH ATM4-27**

AMS, as contemplated by the rule, will be minimal.

- ii. No. Processing a rate case is time consuming and expensive for the Company and ratepayers, and time consuming for Commission Staff, especially if the sole reason for filing such a case would only be for review of the AMS surcharges. Further, P.U.C. SUBST. R. 25.130 provides for true-up of surcharge costs outside of a rate case. Lastly, REPs have the ability to roll up non-bypassable charges and not line item them on a bill.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM' FOURTH REQUEST FOR INFORMATION
QUESTIONS ATM4-1 THROUGH ATM4-27**

ATM4-9

Response to ATM3-8.

- a. Please provide the workbooks used to calculate each of the estimated benefits listed in the table on page 34 of TNMP's application for federal stimulus funds. Please provide the workbooks in operational format with all input assumptions and formulae.**
- b. Please provide the Company's estimate of the value of a reduction in peak demand by customers on its system, e.g. the "avoided cost of capacity", and all assumptions and calculations supporting that estimate**
- c. Please provide the Company's estimate of the percentage of residential customers on its system who will participate in dynamic pricing and all assumptions and calculations supporting that estimate**
- d. Please provide the Company's estimate of the reduction in peak demand, in 1tW and as a percentage of peak demand, by residential customers on its system in response to dynamic pricing and all assumptions and calculations supporting that estimate.**

RESPONSE

Prepared by: Gary Kessler

Sponsor: Gary Kessler

Attachment: None.

- a. The DOE application contains many technologies and assumptions that are not relevant to compliance with SUBST. R. 25.130. Therefore, the estimated benefits are not similar to those calculated for the Company's AMS filing.
- b. The Company cannot estimate this information as these activities are not part of the Company's operational domain.
- c. The Company cannot estimate this information; this is the function of Retail Electric Providers, not part of the Company's operational domain.
- d. The Company cannot estimate this information as these activities are not part of the Company's operational domain.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM' FOURTH REQUEST FOR INFORMATION
QUESTIONS ATM4-1 THROUGH ATM4-27**

ATM4-13

Response to ATM3-12 c.

a. Please explain the last sentence "TNMP understands that other utilities included costs for MDMS and back office."

b. Please provide the information that TNMP has collected on other utilities that have reduced the cost of their AMS or Smart Grid projects by outsourcing certain of the associated back office system functions.

RESPONSE

Prepared by: Allan Burke, Gary Kessler

Sponsor: Allan Burke, Gary Kessler

Attachment: None.

- a. It is TNMP's understanding that other Texas utilities included similar costs in their applications or for an AMS surcharge.
- b. TNMP is unaware of any utilities that have reduced the costs of their AMS or Smart Grid projects by outsourcing any back-office system functions. Thus, no information has been collected.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO ATM'S SEVENTH REQUEST FOR INFORMATION
QUESTIONS ATM 7-1 THROUGH ATM 7-4**

- ATM 7-3** Please see Supplemental Testimony of Mr. Whitehurst at pages 7-9 regarding changes to its surcharge model.
- a. Has the Company removed the costs associated with its proposed OMS system from its surcharge model? If yes please provide workpapers showing the specific costs that were removed. If not please explain why not.
 - b. Regarding page 9:8 please identify where the May 2010 reports this total revenue requirement. If it is not reported in the May 2010 please provide the development of this amount.
 - c. Regarding page 9:10 please provide the development of the revised total of \$126,120,825.
 - d. Has the Company compared the revised costs for its AMS to the costs of AMS proposed or installed by comparable utilities? If so please provide that comparison. If not, why not.
 - e. Regarding page 9:14 please provide the rationale for using un-weighted meter count for this allocator, rather than average bill weighted meter count or weighted meter cost.

RESPONSE Prepared by: Stacy R. Whitehurst
Sponsor: Stacy R. Whitehurst
Attachment: None

- a) No. TNMP did not remove the proposed OMS from its updated surcharge model because TNMP still seeks recovery of the OMS system as the OMS system is an integral part of TNMP's AMS.
- b) Exhibit MDM - 2 (McKinsey) HIGHLY CONFIDENTIAL 5-18-2010.xls – “surcharge” tab
- c) HighlySensitive_HighlyConfidential_Exhibit SRW-S-1 (TNMP SURCHARGE MODEL).xls “surcharge tab”
- d) No. There is no comparable utility to TNMP in Texas. The other utilities (Centerpoint, Oncor, AEP Texas) that have deployed an AMS system are all significantly larger than TNMP. Additionally, TNMP does not have access

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to the proprietary AMS cost information belonging to the other Texas utilities.

- e) Using an average bill weighted meter count or weighted meter cost did not reflect the amount of meter reading savings to residential that are assigned to them in TNMP's base rates.

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RESPONSES TO ATM'S SEVENTH REQUEST FOR INFORMATION
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ATM 7-4 Please see Supplemental Testimony of Mr. Whitehurst at pages 7-9 regarding changes to its surcharge model. Has the Company increased the savings in its distribution system revenue requirements closer to the levels of savings it identified in response to LK 1-7? If not please explain why not.

RESPONSE Prepared by: Stacy R. Whitehurst
Sponsor: Stacy R. Whitehurst
Attachment: None

No. Discretionary fees are treated as an adjustment to TNMP's cost of service. In the recent rate case, TNMP requested lowering the discretionary fees because of the impacts of AMS. In that proceeding, intervenors rejected TNMP's proposal and decided to keep the higher discretionary fees to be applied as an off set to TNMP cost of service, thus lowering the revenue requirement.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS LK1-1 THROUGH LK1-27**

LK1-7 **Please provide a copy of all documents prepared by or on behalf of the Company that address the potential savings that can be achieved through deployment of AMS. This includes any and all such documents, regardless of whether the Company included such savings in its AMS model and proposed surcharge. Please provide workpapers supporting the development of the functionalization factors provided in Schedule II-F.**

The information responsive to this request constitutes HIGHLY SENSITIVE PROTECTED MATERIAL under the terms of the Protective Order issued in Docket No. 38306. The information consists of commercially sensitive financial and business operations projections for Texas-New Mexico Power Company. Counsel for TNMP has reviewed the information sufficiently to state in good faith that this information merits this designation, and that it contains confidential business information and commercially sensitive financial and business operations information that is exempt from public disclosure under the Public Information Act, TEX. GOV'T CODE §§ 552.101 and 552.110.

RESPONSE Prepared by: Allan Burke
 Sponsor: Allan Burke
 Attachment: Highly Sensitive TNMP Discretionary Fee.pdf
 Please see attached Highly Sensitive TNMP Discretionary Fee.pdf.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS LK1-1 THROUGH LK1-27**

LK1-8 **Refer to page 30 and the functionality described as "Remote disconnection and reconnection for meters rated at or below 200 amps" of Mr. Kessler's Direct Testimony.**

- a. Please confirm that the remote disconnect/reconnect functionality will result in savings for the Company's distribution field personnel. Please provide a copy of all studies and/or analyses that support and/or quantify the Company's response.**
- b. Please explain why the Company's AMS model reflects no distribution savings from the remote disconnect/reconnect functionality.**

RESPONSE

Prepared by: Michael Montgomery

Sponsor: Allan Burke

Attachment: None

a. AMS-driven cost savings for TNMP primarily include reduced meter reading expense and associated costs, reduced back-office Business Technology expense, and reduced property taxes. Meter reading cost savings are driven by reduced labor and fleet expenses due to elimination of the need to manually access each meter on a monthly basis. Back-office savings are driven by a reduction in maintenance agreements and licensing fees for systems being replaced by an MDMS. Detailed descriptions of these savings are provided in the testimony of Allan Burke and Kimberly Morris.

The incorporation of remote connect/disconnect functionality in AMS meters eliminates the need (in most cases) for hands-on meter work required to connect or disconnect a customer. There will be some savings associated with move-ins where existing service has already been installed, move-outs, reconnects, and disconnects.

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At this time TNMP is not forecasting labor savings associated with this connect/disconnect functionality. The Service Techs who currently perform this work will be re-skilled for other job responsibilities including operating and maintaining the AMS infrastructure. These employees will continue to perform hands-on meter work throughout the deployment period and beyond for meters that do not have the connect/disconnect functionality (loads with health or safety concerns if disconnected and poly-phase and/or higher than 200 amp meters). It should be noted that cost savings for end-use customers will be seen through a reduction in discretionary fees for those tasks that will be completed remotely (connects, disconnects, meter re-reads).

b. As mentioned in LK1-8a, the Company is not forecasting operational savings associated with connect/disconnect functionality; the AMS model reflects this position.

To the extent any additional savings are realized, including savings from connect/disconnect functionality; they will be passed on to customers either through a reduced discretionary fee, as part of the AMS reconciliation proceeding, or in a base rate case.

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LK1-9 **Refer to page 5 lines 2-3 of Mr. Burke's Direct Testimony. Please provide all support, including a copy of all source documents relied on for this statement.**

RESPONSE Prepared by: Allan Burke
 Sponsor: Allan Burke
 Attachment: None

There are currently 14 Field Technicians that perform those services, and their salaries are included in base rates. These Field Technicians will be given additional training to handle situations that will arise from the new AMS meters, including meter tampering investigation and documentation, meter communication issues, potential HAN issues, on-site meter testing, and other AMS meter issues and resolutions. These field technicians will still be responsible for disconnection, reconnection, move-in and move out on poly phase meters. Based on these facts, there are no savings to be realized in the AMS surcharge nor base rates.

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RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
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LK1-12 **Refer to page 4 lines 24-25 of Mr. Burke's Direct Testimony.**

- a. Please confirm that the AMS "information will enable faster, more accurate outage analysis and improved restoration response time." In addition, please confirm that this will result from the Outage Management System that the Company will deploy in conjunction with the AMS.**
- b. Please confirm that the OMS will result in savings from the Company's distribution personnel and/or enhanced revenues due to fewer outages and shorter outage times. Please provide a copy of all studies and/or analyses that support and/or quantify the Company's response.**
- c. Please explain why the Company's AMS model reflects no distribution savings from the OMS.**

RESPONSE

Prepared by: Allan Burke
Sponsor: Allan Burke
Attachment: None

- a. TNMP confirms that the new meters will provide TNMP immediate notification of power outages. Today, for distribution outages, the only way TNMP knows of an issue is through customer notification. The use of an Outage Management System ("OMS") will be required to handle the immense amount of data that will be generated in order to enable TNMP to more quickly and accurately predict the exact location of the failure.
- b. TNMP confirms that appropriate personnel will better know the location of an outage with the combination of AMR meters and an OMS. Today, TNMP is notified of outages from customers through the call center. This customer information is compiled and analyzed to calculate the approximate location of the outage. Then, the lines must be patrolled in that area to better locate the source of

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the outage. The instantaneous outage data from the new AMR meters combined with the technology of an OMS will dramatically reduce the amount of time it takes today to locate an outage. Crews should not have to incur as much additional time patrolling lines to locate the failure.

c. TNMP has not quantified any savings based on actual data.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS LK3-1 THROUGH LK3-23**

LK3-1 **Refer to page 35, lines 12-13, of Mr. Kessler's Direct Testimony.
Please provide a definition of the term "back-office systems" as that term is
used by Mr. Kessler. Provide all authoritative support for the Company's
definition and use of that term, including the scope and functionality of the
systems the Company believes fall within the definition of that term.**

RESPONSE Prepared by: Gary Kessler
Sponsor: Gary Kessler
Attachment: None.

The Term "Back-Office" is a common term used in the IT industry to define systems and processes that do the majority of the data processing and information preparation for a corporation. The most commonly available definition from Wikipedia defines the term as the following:

"A **back office** is a part of most corporations where tasks dedicated to running the company itself take place. The term comes from the building layout of early companies where the front office would contain the sales and other customer-facing staff and the back office would be those manufacturing or developing the products or involved in administration but without being seen by customers. Although the operations of a back office are usually not given a lot of consideration, they are a major contributor to a business.

Examples of back-office tasks include IT departments that keep the phones and computers running (operations architecture), accounting, and human resources. These tasks are often supported by back-office systems: secure e-commerce software that processes company information (e.g. a database). A back-office system will keep a record of the company's sales and purchase transactions, and update the inventory as needed. Invoices, receipts, and reports can also be produced by the back-office system."

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TNMP considers back office systems to be comprised of the Meter Data management system and the Outage Management System. Both of these systems are part of the Company's operational architecture and will be key components in increasing the efficiency of the Company's operations that are affected by the installation of AMS.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS LK3-1 THROUGH LK3-23**

LK3-2

Refer to page 35, lines 17-18, of Mr. Kessler's Direct Testimony.

- a. Please provide a description of the existing outage management system, or if there is no "system," then provide a description of the present functions that are performed, but that will be replaced and/or enhanced by the "new" OMS.**
- b. Please provide a copy of all studies, analyses, reports, and all other documentation of the Company's existing outage management work processes compared to the new OMS work processes, including, but not limited to, any present functions that are performed, but that will be replaced and/or enhanced by the "new" OMS and/or the quantification of any cost savings from that process.**
- c. Please explain why the Company considers the OMS a "back-office system." Please differentiate this from the Company's other field distribution outage and maintenance functions and/or systems.**

RESPONSE: Prepared by: Gary Kessler and Stacy Whitehurst
Sponsor: Gary Kessler and Stacy Whitehurst
Attachment: None.

- a. TNMP currently has no system to provide automated management of outages or information. In particular, AMS meter outage information would be directly routed to the OMS to assist in efficiently supporting outage restoration. TNMP currently has a set of manual processes to handle outages. These processes vary in complexity depending on the severity of the outage.
- b. The Company does not have the manpower or budget to perform

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exhaustive studies and comprehensive documentation pertaining to the analysis and impact of an OMS on current outage management processes. The intent of installing an OMS would be to automate as many of the existing processes and possible and to incorporate AMS meter outage alarms into the outage management process to increase efficiency of outage dispatch and repair. With the implementation of the OMS and the training of the OMS operators, TNMP would be able to transfer the dispatch calls responsibility from PNM's call center to the OMS operators. The amount associated with TNMP's costs for dispatched call center costs from PNM is shown in Work Paper II-D-1 2 filed in Docket No. 38480.

- c. The definition of back office includes systems that support the company's operations. The OMS will be an integral part of supporting outage operations and preparation, direction and delivery of critical outage information to field operations. Currently the company has no other distribution outage systems that perform this function.

**TEXAS-NEW MEXICO POWER COMPANY'S
RESPONSES TO CITIES' FIRST REQUEST FOR INFORMATION
QUESTIONS LK3-1 THROUGH LK3-23**

LK3-22 **Please provide a quantification of all OMS costs included in the AMS Surcharge model, including, but not limited to, the amounts included in the labor (BTS internal) capital costs and O&M expenses line items on Exhibit KKM-2 attached to Ms. Morris' Direct Testimony.**

RESPONSE Prepared by: Gary Kessler
Sponsor: Gary Kessler
Attachment: None.

All anticipated OMS costs are detailed in the McKinsey Model and in Exhibit KKM-2.