

N.H.P.U.C. Case No.	DE 09-035
Exhibit No.	#8
Witness	Panel 1
DO NOT REMOVE FROM FILE	

**THE STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES
COMMISSION**

Docket No. DE 09-035

**DIRECT TESTIMONY OF
Stephen M. Johnson**

June 30, 2009

000011

1 **I. INTRODUCTION**

2 **Q. Please state your name, business address and position.**

3 A. My name is Stephen M. Johnson. I work at PSNH Energy Park, 780 North Commercial
4 Street, Manchester, New Hampshire. I am the Director – Energy Delivery for Public
5 Service Company of New Hampshire (“PSNH” or the “Company”).

6 **Q. Have you previously testified before this Commission?**

7 A. No. I have, however, participated in technical sessions in a variety of NHPUC dockets
8 including the settlement discussions during PSNH’s last rate case, Docket No.
9 DE 06-028.

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my testimony is to discuss the Company’s Reliability Enhancement
12 Program (“REP”). I will review the current status of existing REP programs and the
13 anticipated expenditures for capital and operation and maintenance (O&M) in support of
14 those programs. I will also review the positive impact of the REP program on PSNH’s
15 distribution system reliability and proposed changes to the REP funding to allow us to
16 further improve reliability through additional, targeted capital and O&M expenditures.

II. PSNH’S RELIABILITY ENHANCEMENT PROGRAM

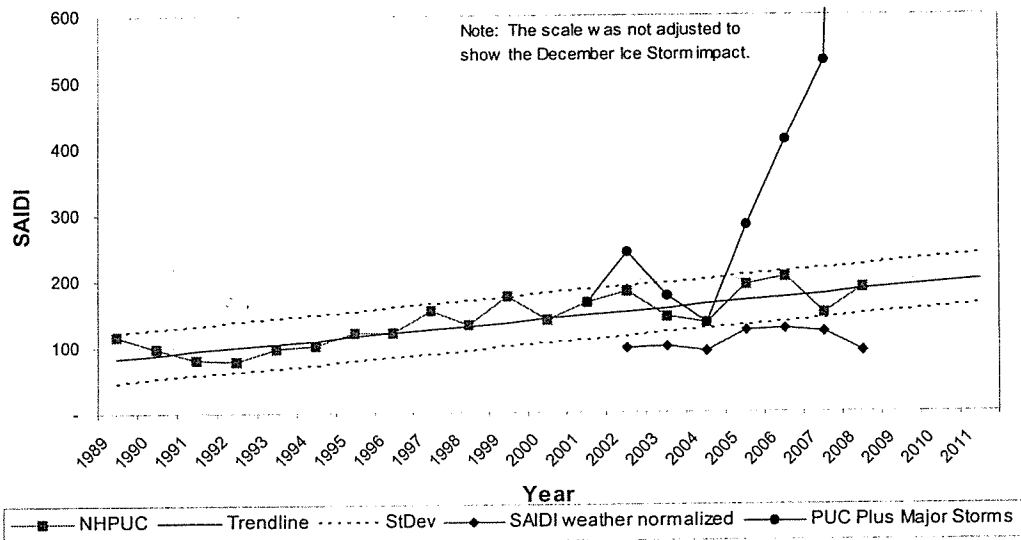
17 **Q. Please provide a summary of the Reliability Enhancement Program.**

18 A. The Reliability Enhancement Program was established as a 5-year effort under the
19 settlement agreement approved by the Commission in Order No. 24,750 in Docket No.
20 DE 06-028. The REP became effective July 1, 2007 concurrent with the effectiveness of
21 permanent rates under the settlement agreement. The REP provides PSNH with \$10
22 million in annual distribution revenue to improve reliability through enhanced, targeted
23 capital and O&M expenditures. Our interest in this program came about as a result of the
24 assessment of PSNH’s Distribution Reliability and System Planning performed by the
25 SHAW Group, Stone & Webster Management Consultants. This assessment was a result
26 of a settlement agreement in the prior rate case (Order No. 24,369, Docket No.
27 DE 03-200) and completed in December 2005.

- 1 **Q. What kinds of activities or programs are included in the REP?**
- 2 A. In very broad terms, the REP consists of O&M activities and actions directed at:
- 3 Distribution Line Vegetation Management
- 4 Distribution Inspection and Repairs (National Electrical Safety Code)
- 5 Line and Substation maintenance activities
- 6 For Capital, the programs amount to \$10 million per year and include:
- 7 New Technology upgrades, replacements and installations
- 8 Obsolete Equipment replacement
- 9 Distribution Circuit rehabilitation
- 10 Underground Cable Replacement
-
- 11 **Q. What progress has been made on the REP?**
- 12 A. Actual results for O&M expense activities for the initial 18 months of the REP through
- 13 December 31, 2008 show \$12.2 million expended on the targeted activities. For that
- 14 same 18 month period PSNH invested \$15 million in various REP capital projects. A
- 15 requirement of the REP is an annual report of current activities and those for the next
- 16 budget year which is submitted by April 1 of each year. That report has been filed in
- 17 2008 and 2009 and contains much more detail about the tasks and projects conducted
- 18 under the REP program. In general, PSNH's REP program meets its objectives for
- 19 performance and cost-effective expenditures.
-
- 20 **III. POSITIVE IMPACT OF THE REP ON PSNH'S RELIABILITY**
-
- 21 **Q. What is the value of this program on electric system reliability?**
- 22 A. A typical way to measure electric system reliability in the industry is using the system
- 23 average interruption duration index ("SAIDI") which measures how long the average
- 24 customer served is without power over the course of a year. SAIDI is measured in
- 25 minutes of outage time. PSNH's SAIDI reliability is shown in the graph below:

PSNH SAIDI - NHPUC Criteria

With and Without Storms

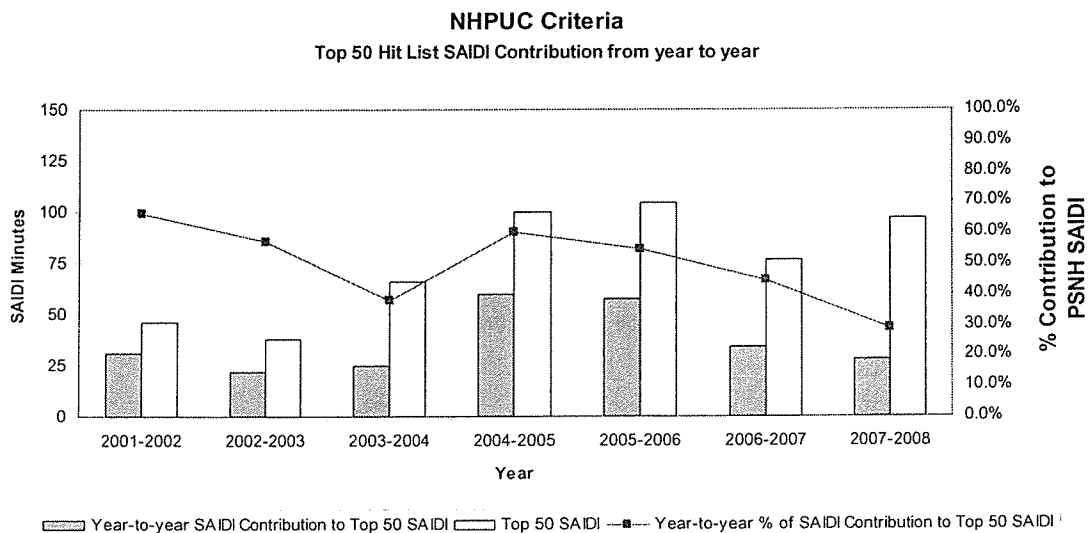


1 As shown above, the NHPUC reported SAIDI has remained below the all time high that
 2 occurred in 2006, the last year before the REP began. The impact of major storms
 3 (including the 2008 December Ice storm) is outside of NHPUC reported data and is
 4 shown only for reference. Weather events which meet the NHPUC criteria for “major
 5 storms” are allowed to be excluded from the calculation of NHPUC reported SAIDI.

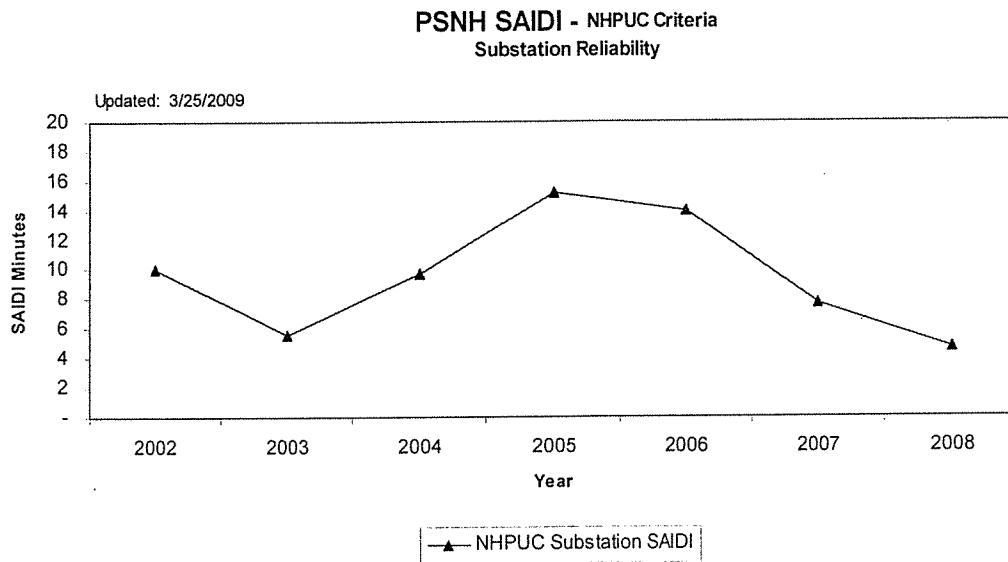
6 In addition to the standard method used to determine NHPUC SAIDI described above,
 7 PSNH also determines a weather-normalized SAIDI. Days where 100 outages or more
 8 occur in a 24 hour period are separated from NHPUC reported SAIDI and the result is
 9 our typical day to day routine or “weather adjusted” reliability. As shown in the above
 10 graph, the data indicate an improving trend in this area. In 2008, PSNH had 20 days with
 11 100 or more outages, not including those days with "major storms". Historically, we
 12 experience half as many “100 or more outage” days in a normal year.

13 **Q. Are there other ways to demonstrate how the reliability of PSNH’s distribution**
 14 **system has improved due to the REP?**

1 A. Yes there are. For many years PSNH has tracked the reliability performance of the 50
2 worst performing distribution circuits and ranked them from highest to lowest in SAIDI
3 contribution to the total company SAIDI. We have found that of the 600 circuits in our
4 system, these 50 have a high proportion of the SAIDI minutes we experience in a year.
5 We have used a variety of the REP programs, both capital and expense, on these circuits
6 in order to improve their reliability and we are clearly seeing an improving trend. The
7 total SAIDI minutes and percent contribution for these circuits in each year is declining.
8 The amount of SAIDI minutes due to circuits remaining on the list from one year to the
9 next is also declining. The chart below helps to illustrate this improvement:



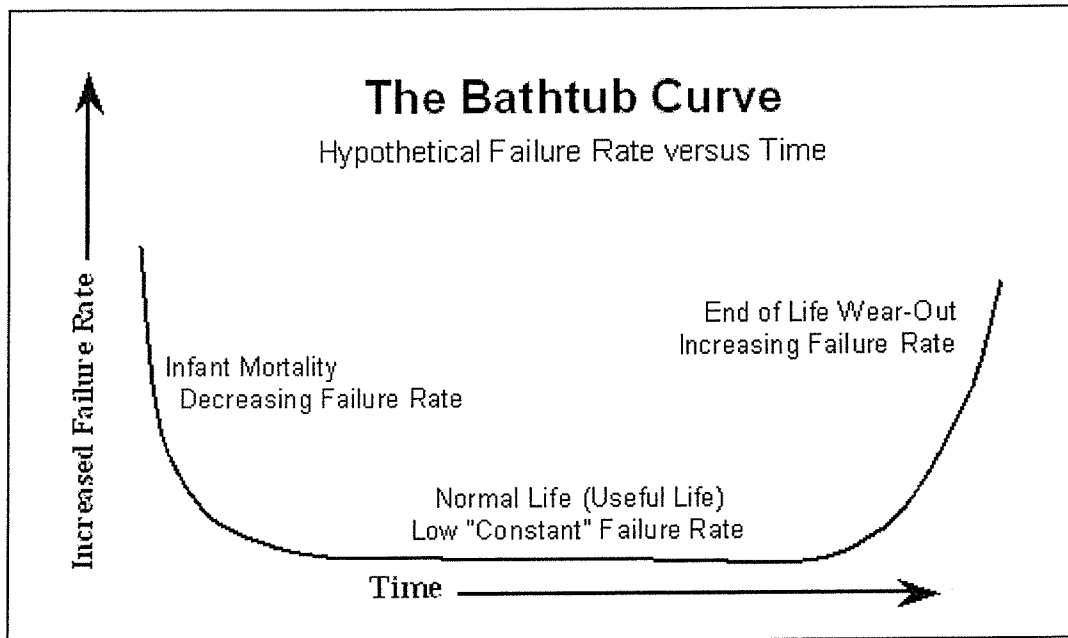
10 PSNH is also continuing to see an improvement in reliability relating to distribution
11 substations. We believe this reflects our ongoing REP O&M activities focusing on
12 planned maintenance, combined with REP-funded capital projects such as breaker and
13 distribution substation transformer upgrades and brown glass insulator replacements.
14 This improvement is shown in the following graph of substation SAIDI.



1 **Q. What other value does the REP program provide to PSNH and its customers?**

2 **A.** Additional value of the REP program includes proactive replacement of older and
3 problematic equipment and proactive maintenance of equipment which ensures proper
4 operation, instead of facing a costly emergency replacement of equipment and a
5 potentially lengthy outage.

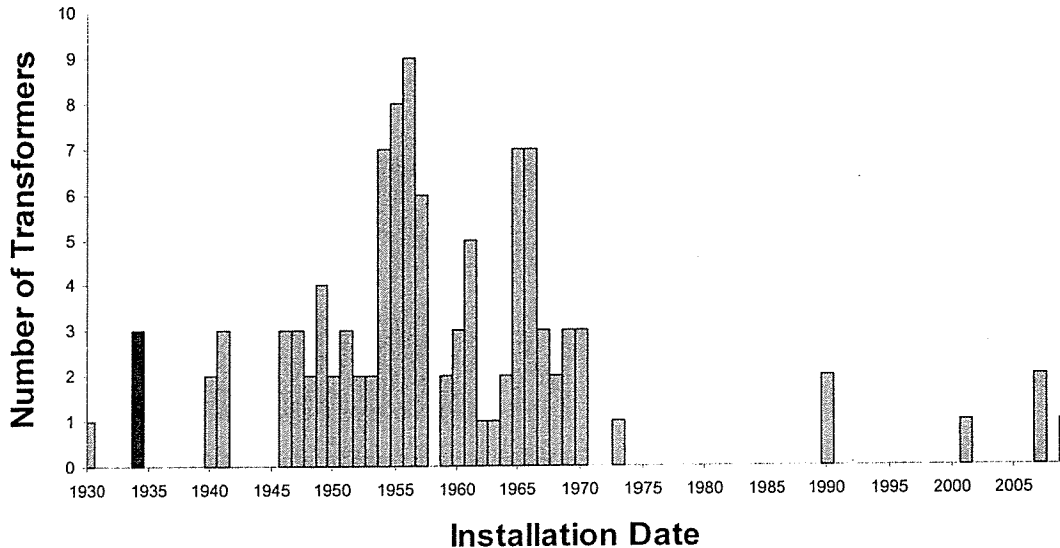
6 PSNH is no different than many utilities in that in the years following World War II,
7 there were major capital investment programs to meet the growing needs of customers.
8 This aging equipment has performed well over the years but is nearing the end of its
9 useful life. A common way to display failure rate approximation is the “bathtub curve”
10 shown below. It is used in many industries and for various components of a system. The
11 concept shows that a product or component has higher failure rates and different modes
12 of failure early in life (failure “right out of the box”) and late in life (when it becomes
13 worn out).



1 Shown below is PSNH's age profile for substation transformers. You can see the
2 majority of our transformers are now over 45 years old; the oldest is vintage 1930. The
3 potential for failure increases with advanced age. Shown in red are three transformers at
4 our South Manchester Substation.

5 The REP capital program provided us the opportunity to rebuild the South Manchester
6 substation which included the 1934-vintage transformers, circuit breakers and other
7 components dating from the 1920's. The substation feeds load in primarily residential
8 areas in Southeast Manchester. The substation capacity was increased from 6MW to
9 10.5MW allowing for load growth in addition to providing for backup ties to other
10 substations, which improves reliability and provides greater flexibility to maintain
11 circuits.

PSNH Distribution Substation Transformer Age Profile



Another example of managing the aging equipment population is proactive change-out of older and problematic equipment. Sometimes this is necessitated by a known manufacturing defect, and at other times it is a generic mode of failure that appears earlier than anticipated or due to specific application conditions. For example, utilities have long used porcelain as insulators on all voltages. There is a known failure for these products due to moisture combined with freeze and thaw cycles leading to cracking and fracture of the porcelain insulators.

The REP capital program allowed PSNH to address this problem by funding the programmatic change-out of these porcelain insulators with the goal of ultimately eliminating them from all distribution lines. The table below shows our progress to date in this effort. Note that the porcelain change out efforts shown commenced at the time REP began in July 2007 (thus a partial year), but that 2008 was a full year with \$2.0M of capital budgeted for this task. This is a multi-year effort and PSNH's goal is to change these out, removing the old insulator and replacing it with a modern polymer insulator product, system-wide over a 10-year period.

	<u>Disc Insulators</u>	<u>Cutouts</u>	<u>Lightning Arrestors</u>
Total population	92,000	48,000	11,000
Changed out in 2007	1,888	701	146
Changed out in 2008	<u>6,101</u>	<u>913</u>	<u>213</u>
Changed out to date	7,989	1,614	359

1 A third example is the replacement of equipment that is unique and one of a kind such as
2 what was done at PSNH's Gorham Substation. The Company's last remaining 1952
3 vintage Westinghouse circuit breaker was replaced under the REP capital program. In
4 addition to its age, it was the last of only two of this specific type in use at PSNH.
5 Retiring these unique breakers eliminated a one of a kind requirement for training and in
6 house skill retention. We also disposed of spare parts, unique tools, repair manuals and
7 operating instructions. This is a prime example of how maintenance issues can be
8 reduced with removal of obsolete equipment.

9 IV. CURRENT REP BUDGET AND PROGRAM ALLOCATION

10 **Q. How do the capital and O&M expenditures under the REP program relate to the**
11 **\$10 million included in PSNH's rate level?**

12 **A.** Under the current program, PSNH's plan is to complete \$10 million of capital investment
13 each year. Pursuant to the settlement agreement approved by the Commission in Order
14 No. 24,750, annual REP capital expenditures were to be in excess of what would have
15 typically been budgeted under normal business practices (prior to the REP initiative). In
16 order to ensure that the amount PSNH invested annually in REP capital was truly
17 incremental, PSNH tracked all reliability capital with the understanding that only \$10
18 million is REP and the rest is assumed to fall under "normal" business investment.

19 For each \$10 million of REP capital investment placed in service, PSNH estimates that
20 \$1.2 million in revenue requirements per year is needed to support this incremental rate
21 base. In order to support REP capital, the REP O&M budget funded by the \$10 million

of total REP revenue was first reduced by the total capital-related revenue requirement. Thus, for the first program year ending June 2008, \$8.8 million of REP revenue was allocated towards O&M expense activities (\$10 million total less \$1.2 million capital support). In the second program year ending June 2009, the funding allocated towards REP O&M activities from the \$10 million of revenue was reduced by year 1 capital revenue requirements of \$1.2 million in addition to the year 2 capital revenue requirements of \$1.2 million. This allows for a net amount of \$7.6 million to be spent on REP O&M during the second program year. This O&M erosion process continues through the life of the existing REP program. Over time, the amount of revenue available to perform O&M expense activities is significantly reduced. Attached is a table from PSNH's annual REP report that demonstrates this O&M erosion over five program years. Note this is on a "program year" basis (i.e., split year) and not on a calendar year basis.

	ACTUAL PROGRAM YR 1	Reliability Enhancement Program Revenue Allocation Plan				
		YEAR 2	YEAR 3	YEAR 4	YEAR 5	
REP AREA	12 Mo End 6/30/08	12 Mo End 6/30/09	12 Mo End 6/30/10	12 Mo End 6/30/11	12 Mo End 6/30/12	
Vegetation Management	\$ 2,758,418	\$ 2,974,000	\$ 2,856,000	\$ 2,976,000	\$ 3,085,000	
NESC Inspect/Repair	\$ 2,824,686	\$ 2,233,000	\$ 2,440,000	\$ 2,090,000	\$ 915,000	
O&M Activities	\$ 2,949,570	\$ 2,393,000	\$ 1,104,000	\$ 134,000	\$ -	
Total O&M	\$ 8,532,674	\$ 7,600,000	\$ 6,400,000	\$ 5,200,000	\$ 4,000,000	
CAPITAL Financing	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	
PRIOR YEAR CAP	\$ -	\$ 1,200,000	\$ 2,400,000	\$ 3,600,000	\$ 4,800,000	
REVENUES	\$ 9,732,674	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	

Vegetation Management and NESC Inspection/Repair are escalated in time assuming 100% contractor
NESC Inspect/Repair is reduced in Year 5 after completing 1st cycle in 4 years, next cycle is twice as long
O&M Activities are reduced annually due to allocation of revenues to continue "Base" activities and Capital

Q. What is the forecast for REP expenditures?

A. PSNH's April 1, 2009 REP report contains a detailed forecast of capital and O&M expenditures through the end of 2009 as well as overall budget estimates for the 5-year effort. We expect to be able to execute our plans through the end of 2009. However, beginning in 2010, and absent this rate proceeding, PSNH would need to curtail O&M

activities with even more reductions in subsequent program years due to the additional deployment of the \$10 million revenue stream in order to support the REP capital placed in service. Notwithstanding this, PSNH's plan is to continue a steady capital investment of \$10 million per year for each year of the existing REP program.

Q. What changes need to be considered for continuation of an effective REP?

A. When the programs and actions were determined during the previous rate case settlement, the long-term effect of declining net revenue available for O&M programs was not fully appreciated. In addition to the revenue requirements to support the capital effort, the cost to maintain individual programs can escalate over time which further compresses program allocations. While some of the programs may decline in cost over time due to establishing longer maintenance cycles with the replacement of aging infrastructure, this cost reduction does not offset the increased cost to support capital investment and the inflation effects and make it more difficult to stay within REP's fixed revenue stream.

Most of the O&M expense activities will require sustainability beyond the life of the REP and, as such, do not work well within the current declining funding framework. The amounts needed to maintain the system while actively replacing aging plant do not decline as the available revenue does; over a long time horizon funding requirements for maintenance remain the same. While the average age of plant will slowly decline over time, for the foreseeable future PSNH's reliability-based O&M expenditures will substantially be based on the system in place now and therefore will require a stable revenue stream for sustainability.

Q. What do you mean by sustainability?

A. Some programs require expenditure of funds each year in order to obtain the intended results. For example, during settlement discussions on the REP, vegetation management was deemed a "base" O&M expense activity with an expectation that the activities should be established and maintained as an ongoing business practice. The intent was that we would reduce our average trimming cycle from 5 years to 4.5 years. This requires the same incremental volume of work every year and will continue long after the original REP was planned to expire. Another example is O&M expense for switch maintenance. It is cyclical and requires repeated performance over the life cycle of the switch.

1 **Q. Are there any programs that do not require sustainability?**

2 A. Yes, within the REP we just completed an O&M expense program to retrofit all of our
3 substations with animal guards. This was completed ahead of schedule and on budget.

4 Now that it is complete, there is no further action needed and maintenance of animal
5 guards is very modest. This can be easily incorporated into PSNH's routine maintenance
6 practices.

7 Another example is an O&M expense for a substation grounding study to benchmark and
8 determine "step and touch" potential conditions throughout our system, especially where
9 bulk transformers had been installed. "Step and touch" potential refers to safety
10 requirements where a person could be shocked while standing in a substation and
11 touching an equipment cabinet or fence while a short circuit occurred locally or
12 elsewhere. While still ongoing, this effort will be completed and the information
13 obtained will be used for future design of equipment. The associated revenue
14 requirement for this program will end in the next few years, because once it's completed,
15 there will be no need to continue to incur the expense.

16 **Q. Is this issue the same for capital?**

17 A. Not to the same degree. Since the capital portion of our plan for the REP is funded at \$10
18 million per year, the inflation effect is there but not the revenue requirements for that
19 capital plan.

20 It is also important to recognize that the O&M plans generate capital work. National
21 Electric Safety Code (NESC) inspections and pole inspection and treatment are prime
22 examples. During such pole inspections, if a damaged or unsafe pole is found, then this
23 O&M activity will cause capital to be invested to replace the damaged pole. Therefore,
24 these O&M activities can 'drive' or create the need for additional capital investments as
25 they are performed and, hence, the capital component also needs to be sustained. PSNH

1 inspects 22,000 poles annually, and while many of them prove to be adequate to remain
2 in service, others require chemical treatment to avoid decay and insects, and still others
3 are deemed unfit to remain in service and must be replaced or reinforced, causing a
4 capital expenditure.

5 Other capital items are actually long-term replacement programs that extend beyond the
6 original life of the REP, such as porcelain insulator change-outs and substation brown
7 glass insulator replacements. There is too much to do on a short time horizon, both
8 physically and financially. These are programs that need steady funding for the long
9 term until all of the components are replaced.

10 **Q. What is the best option to ensure continued REP O&M funding?**

11 A. In order to maximize available funds for O&M activities, the total REP capital
12 investment that has accumulated should be placed into PSNH's distribution rates rather
13 than continuing to be supported and tracked within the current REP program. By the end
14 of program year 2 on June 30, 2009, there will be \$20 million of accrued REP capital
15 (equating to \$2.4 million of ongoing revenue requirements) that is in service and
16 benefiting PSNH's customers. The \$15 million of REP capital placed in service as of the
17 end of the 2008 test year has been included in the rate base amounts described in
18 Mr. Baumann's testimony. However, this is only a partial solution to the issue of REP
19 O&M erosion. It will be necessary to propose some further amendments to the program
20 and to fully reflect all REP capital in PSNH's distribution rates in order to maximize the
21 long-term benefit of the REP for PSNH's customers.

22 **V. ISSUES NOT ADDRESSED IN CURRENT REP**

23 **Q. Are there other issues to consider regarding continuation of the REP program**
24 **framework?**

25 A. Yes. The REP provides a highly valuable portfolio of activities that improve service to
26 our customers. It addresses activities that PSNH had underway that needed
27 improvement, activities that were not being performed but were required, and activities
28 that needed funding to manage them in a programmatic fashion. The REP provided a
29 reliable funding mechanism to allow these much needed improvements to occur and

1 required annual reporting in order to ensure that the work was being performed as
2 planned. We now need to make sure these and other reliability activities can continue on
3 a long-term basis.

4 The Stone and Webster Assessment from 2005 identified the value of a Geographic
5 Information System ("GIS"), pointing to its ability to provide improved Outage
6 Management. Their recommendation included the use of mobile technology in the
7 workforce and streamlining data capture to reduce duplication. These interrelated
8 activities can both be accomplished if a GIS is in place. PSNH has studied the
9 implementation of this kind of system and our research shows that it would require a
10 multi-year (5 or more) effort to implement and achieve significant operational gains.

11 It is expected that the total GIS program implementation would cost \$10-15 million of
12 capital with associated O&M expense activities of \$1-2 million. Ongoing operating and
13 support costs for portions or the entire GIS have not been estimated yet but there would
14 be an increase in annual expenses to maintain and support a GIS. This project needs
15 specific revenue support to be able to execute successfully and effectively over its
16 lengthy implementation period; hence, we propose adding it as an REP program.

17 Having successfully restored service after the major storm in December, 2008, PSNH has
18 identified additional programs which should be included in the REP. The damage to the
19 system has been repaired; however, the effects of this storm will be with us for a very
20 long time. The impact on vegetation management O&M programs is an additional
21 \$500,000 annually to deal with damage to trees that may not be visible but renders them
22 weaker and declining in health over time. In addition we believe further short-term
23 vegetation management funding for takedown and danger conditions (\$600,000) is
24 required as well as a short-term increment of \$500,000 for 34.5 kV right-of-way (ROW)
25 "full-width" clearing. For capital, PSNH would establish a program to change out
26 distribution lines which have non-standard small conductors and move some lines out of
27 narrow distribution ROWs.

28 **Q. Can you provide more detail on your plan to implement a GIS at PSNH?**

1 A. Yes. In simple terms, a GIS is a computer database that captures information about the
2 components in our electric distribution system and then ties them to where they are on a
3 geographically referenced mapping system. This allows spotting of poles, transformers
4 and other equipment on a map with a very high degree of accuracy as well as displaying
5 how the system is electrically connected together. A GIS then allows inquiry features
6 such as “what towns are served by a specific circuit and how many of our customers are
7 in each town.” It also allows information to pass electronically to other applications such
8 as circuit models for load and voltage calculations. Ultimate levels of a sophisticated
9 GIS provide for interactive activities including in-the-field circuit layout and design,
10 work management job packaging and dispatch, as well as refined outage management.

11 We expect that the first stage of a GIS would involve definition of the overall scope and
12 the desired end products followed by determining technology requirements, vendor
13 selection and overall implementation plan. Initial deliverables would include establishing
14 PSNH’s overhead maps onto a land base, connecting the new GIS to existing internal
15 databases including Customer Information and Vegetation Management with outputs to
16 automate engineering models and analysis tools.

17 Next steps would include capturing underground systems, incorporating switching and
18 distribution operating information (DSCADA), as well as right-of-way lines. Integration
19 with other readily available GIS data from other entities would also be performed, such
20 as for wetlands and property ownership information that is available from federal, state,
21 and municipal agencies. We would also explore ways share our information to others.

22 Subsequent steps are to move the GIS to desktop/infield design of line extensions and
23 system upgrades. An outage management system and work management opportunities
24 would then become practical expansions of this system.

IV. PROPOSED CHANGES TO REP

25 Q. What changes are necessary to REP in order to ensure continuation of the existing
26 reliability programs as well as allow for certain expanded programs?

1 A. First and foremost, the REP is having a positive impact and is now showing results.
2 Significant progress is being made and it would be very unfortunate to be unable to
3 sustain the efforts we have started.

4 Second, capital expended to date is in service and, as described earlier, has been
5 incorporated into test year rate base and included in Mr. Baumann's total distribution
6 revenue requirement. As reported in our second annual report to the Commission filed
7 on April 1, 2009, REP capital through 18 months ending 12/31/08 is \$15 million with an
8 additional \$10 million accumulating through year end 2009.

9 Third, the current REP O&M activities should be considered a part of normal business
10 practices and, therefore, the \$8.2 million of test year REP O&M expense has been
11 included in the test year revenue requirement. The intent of this inclusion is to transition
12 the existing REP amount into PSNH's standard distribution rates in order to sustain these
13 O&M efforts on an ongoing basis, not just for the five-year horizon included in the
14 original REP. The activities performed under the REP during the last two years are now
15 considered standard business practice by PSNH.

16 Fourth, PSNH is requesting to re-establish the REP increment at \$4 million of annual
17 revenue to provide for expanded reliability initiatives and to allow for the development of
18 a GIS at PSNH.

19 **Q. You mentioned moving REP capital into rate base. What do you mean by that?**

20 A. As mentioned earlier, PSNH will have invested \$25 million in REP capital at the end of
21 2009 that has been supported by the program. This includes distribution investment that
22 is installed and used and useful and should be recognized as part of PSNH's distribution
23 rates and supported through those rates directly rather than through the REP funding.
24 Inclusion of this investment in distribution rates will occur as part of the normal revenue
25 requirements computation in the rate case proceeding. Once rates are set, the activities
26 would no longer need to be specifically tracked through REP.

27 **Q. What type of programs should be sustained and considered base activities?**

1 A. REP activities that have now become ongoing maintenance practices should be
2 considered part of PSNH's base business and therefore recovered through distribution
3 rates. Based upon the 2008 test year O&M expense of \$8.2 million, PSNH proposes that
4 the following programs be recovered through base distribution rates:

5	All programs for Vegetation Management	\$3.2 million
6	All programs for Inspection and Repair	\$2.8 million
7	All programs for Line and Substation Maintenance	
8	(Excluding animal protection at substations)	\$2.2 million

9 Animal protection installed at substations was \$540,000 in 2008 and is now complete.
10 All other programs are cyclical maintenance programs that require sustained effort as
11 normal business practice. The animal protection funding has been included as an
12 increment to the Vegetation Management portfolio which includes mid-cycle trimming,
13 take downs, and reducing the trimming cycle.

14 **Q. How will this change affect the REP capital programs?**

15 A. As mentioned earlier, the O&M programs can have an impact on the amount of capital
16 required within the REP. With essentially all the expense programs in the current REP
17 portfolio in distribution rates, the resulting "base REP" capital requirements need to be
18 supported by a revenue source. Under PSNH's proposal, the revenue to support base
19 REP capital would be within the new \$4 million/year REP increment. Experience to date
20 shows the capital programs related to performing O&M are as follows:

Project	Amount (\$000)
Reject Pole Replacement	\$1,750
Pole Reinforcement	\$ 150
NESC Capital Repairs	\$ 500
Airbreak Switch Replacement	\$ 200
Direct Buried Cable Replacement	\$1,250
Direct Buried Cable Injection	<u>\$ 150</u>
TOTAL	\$4,000

1 This means an accumulation of capital and associated revenue requirements occurs going
2 forward in time as a direct result of REP-based O&M expenditures, and these
3 accumulated capital amounts need permanent revenue support. A new REP funding
4 increment as well as periodic adjustment to PSNH's distribution rates to recognize these
5 known capital additions would allow the new REP funding to be effective and to continue
6 at a sustainable level.

7 **Q. Are there any other changes that should be considered?**

8 A. Yes, PSNH believes we should clearly specify the capital projects that fall under the REP
9 umbrella. Currently we are managing \$10 million of capital additions above normal
10 business allocations on an all inclusive reliability portfolio. PSNH's preferred use of the
11 REP increment for capital is to assure steady progress on system upgrades and
12 elimination of obsolete equipment and the long term gain in reliability that provides.
13 Normal business practice had proven to be insufficient to allow substantial or regular
14 progress on these kinds of efforts.

15 Projects that are long term due to the number of components in service are good
16 candidates for an REP. An example is our distribution line porcelain change-out program
17 discussed earlier. We expect at the current REP funding level porcelain change-out will
18 be a 10+ year effort. Absent REP we would more likely have a modest replacement
19 program and deal with this problem on an operational basis, as failures and outages occur
20 over the life of the equipment. Specifying this project specifically in the REP projects
21 portfolio means steady funding to assure completion.

22 We also are proposing a Geographic Information System as part of this identified capital
23 within a new REP for a similar reason where it is expected to take a long period of time
24 to implement and requires steady funding.

25 **Q. What do you propose for other REP capital projects?**

26 A. PSNH proposes including the capital projects in the following table as specifically
27 tracked projects with revenue support within the new \$4 million/year REP increment.

Project	Amount (\$000)
Distribution line Porcelain Change out	\$2,000
34.5 KV Substation Breaker Replacement	\$ 500
Enhanced Tree Trimming	\$2,000
Pole Top DSCADA Replacement	\$ 500
Substation RTU Replacement	\$ 325
Enable SCADA to Windsor Backup	\$ 135
Dist. line Wire upgrade/eliminate narrow ROW	\$ 400
Reliability Improvements Annual	\$1000
GIS Implementation	\$2,000
TOTAL	\$8,860

1 (NOTE: The Reliability Improvements Annual comprises various smaller individual
2 actions to address individual circuits, unfused lateral installations, mid-line recloser
3 installations and other distribution line capital activities)

4 **Q. Would there also be O&M expense component in the new REP in addition to the**
5 **capital items?**

6 A. Yes, PSNH would propose that the O&M expense be focused on those with a known time
7 frame that can be scheduled within a limited REP term and declining revenue allocation
8 structure. The following activities have been identified:

Expense Program	Amount (\$000)
CASCADE Database field survey - S/S and Dist Line	\$ 200
Replace pre 1984 RTE Elbow Terminators	\$ 250
Substation Switch Maintenance	\$ 300
Inspect and Reclaim 34.5kv ROW width	\$ 500
Takedowns and cycle impact due to storm	\$ 600
GIS O&M Expense, 5 years 10% of capital	\$ 200
O&M expense related to other tracked capital projects	<u>\$ 450</u>
TOTAL	\$2,500

Q. In summary, how do the capital and O&M amounts discussed above relate to the new \$4 million/year REP increment?

A. The following chart provides a high-level summary of how the \$4 million/year in additional REP funding (revenue requirements) will be allocated to capital and O&M (over 4 years):

NEW RELIABILITY ENHANCEMENT PROGRAM ALLOCATION PLAN				
<u>CAPITAL ADDITIONS</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
GIS Capital Project	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000
New REP Capital Projects	\$ 6,860,000	\$ 6,926,750	\$ 7,134,553	\$ 7,348,589
Capital related to Base REP	<u>\$ 4,000,000</u>	<u>\$ 4,120,000</u>	<u>\$ 4,243,600</u>	<u>\$ 4,370,908</u>
Annual Capital Additions	\$ 12,860,000	\$ 13,046,750	\$ 13,378,153	\$ 13,719,497
<i>note Revenue Required is 12% of Capital Additions</i>				
Cumulative Revenue Required for CAP ADDS	\$ 1,543,200	\$ 3,108,810	\$ 4,714,188	\$ 6,360,528
<u>O&M EXPENSE</u>				
GIS O&M Expense	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000
O&M Related to other Tracked CAP ADDS	\$ 407,250	\$ 414,253	\$ 426,681	\$ 439,481
New REP O&M Programs	<u>\$ 1,850,000</u>	<u>\$ 1,800,000</u>	<u>\$ 250,000</u>	<u>\$ 150,000</u>
Revenue Requirements for O&M Programs	\$ 2,457,250	\$ 2,414,253	\$ 876,681	\$ 789,481
 NEW REP Total Revenue Requirements	 \$ 4,000,450	 \$ 5,523,063	 \$ 5,590,869	 \$ 7,150,009
<u>CAPITAL ADJUSTMENT INTO BASE RATES</u>				
Capital Adjustment to Rate Base after Year 1	\$ -	\$ 12,860,000	\$ -	\$ -
Revenue Requirements Adjustment after Year 1	\$ -	\$ (1,543,200)	\$ (1,543,200)	\$ (1,543,200)
Capital Adjustment to Rate Base after Year 3	\$ -	\$ -	\$ -	\$ 13,046,750
Revenue Requirements Adjustment after Year 3	\$ -	\$ -	\$ -	\$ (1,565,610)
 NEW REP Net Revenue Requirements	 \$ 4,000,450	 \$ 3,979,863	 \$ 4,047,669	 \$ 4,041,199

Assuming the test year activities and \$8.2 million of revenue associated with the original REP O&M programs are part of base rates, and using the current REP framework, we can structure a successful new REP for a term of 4 years that would include the following:

- Identified annual capital additions would amount to just over \$12.8 million per year. This includes the GIS project at \$2 million and other specifically tracked capital of \$6.8 million, plus capital related to base REP of \$4 million. This capital plan is estimated to accumulate revenue requirements of \$1.5 million per year, and add another \$1.5 million each succeeding year.

- 1 • A distribution rate adjustment for additional capital placed into service would
2 occur at the completion of program year 1 (June 30, 2011) to account for
3 REP-related capital, thus freeing up the REP revenue to be used for
4 additional capital expenditures under the REP program. An additional
5 capital adjustment could occur at the end of the third year recognizing at least
6 one more year of accumulated capital and again freeing up revenue
7 requirements for the final year of the REP.
- 8 • O&M expense activities amount to \$2.5 million in the first year and decline
9 rapidly to work in concert with the revenue requirements due to the capital
10 plan.
- 11 • REP incremental revenue required on an annual basis would be able to be
12 maintained at \$4 million per year over and above \$8.2 million REP O&M
13 activities now in base rates.

14 We have included inflation effects on the long term programs in both O&M and capital.

15 **Q. Please summarize what you are requesting with respect to the Reliability**
16 **Enhancement Program.**

17 A. We are requesting that the existing program O&M be considered standard business
18 practice and therefore no longer under the REP umbrella. We are also requesting that the
19 Commission allow PSNH an additional \$4 million per year in revenue requirements for
20 new REP activities (both capital and O&M) that I describe above. Finally, in order to
21 continue the new REP program at a fully funded level for a period of four years, we are
22 requesting that the Commission allow PSNH to adjust its distribution rates as of July 1,
23 2011 to recover the REP capital that it spends through the end of the first year (i.e.,
24 through June 30, 2011), and to allow a similar adjustment at the end of the third year
25 (July 1, 2013).

26 **Q. Does that complete your testimony?**

27 A. Yes, it does.

