

Rebuttal Testimony
Richard A. Rosvold

Before the North Dakota Public Service Commission
State of North Dakota

In the Matter of the Application of
Northern States Power Company, a Minnesota Corporation

For Authority to Increase Rates for
Electric Service in North Dakota

Case No. PU-07-776
Exhibit 11

Environmental Issues and Investments

June 13, 2008

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1
2
3 **I. INTRODUCTION**

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

5 A. My name is Richard A. Rosvold. I am the Air Quality Manager for the NSP-MN
6 and NSP-WI operating companies' service territories of Xcel Energy Inc. My
7 business address is 414 Nicollet Mall, Minneapolis, Minnesota 55401.

8 Q. FOR WHOM ARE YOU TESTIFYING?

9 A. I am testifying on behalf of Northern States Power Company ("Xcel Energy" or
10 "the Company"), a Minnesota corporation operating in North Dakota.

11
12 Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

13 A. My formal education consists of earning a Bachelor of Chemical Engineering
14 degree with a Pollution Control emphasis from the University of Minnesota in
15 1988. I have worked in the environmental field (primarily in the air quality area),
16 for the past 20 years, 11 of those with Xcel Energy. I led the project to obtain
17 the air emission permit for the Allen S. King Rehabilitation Project and have
18 been involved with the mercury control planning activities for Xcel Energy. My
19 current responsibilities as Air Quality Manager include permitting and
20 compliance activities for facilities located in Minnesota, Wisconsin, North
21 Dakota and South Dakota.

22
23 Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS PROCEEDING?

24 A. No, I have not.
25
26

1 Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

2 A. The purpose of my Rebuttal Testimony is to address three issues. First, I will
3 demonstrate that, contrary to Mr. Charles King's assertions made on behalf of
4 the Advocacy Staff of the North Dakota Public Service Commission (the
5 "Commission"), Minnesota's environmental regulations are essentially the same
6 as Federal environmental standards. Second, I will discuss the environmental
7 improvements implemented as part of the Company's Metropolitan Emissions
8 Reduction Project ("MERP") to date, and will explain that these improvements
9 are, or soon will be, needed to meet Federal environmental standards. Third, I
10 will discuss the Company's overall approach to addressing environmental
11 standards, concluding that, to date, we have achieved environmental compliance
12 in a cost-effective and risk-mitigating manner.

13

14 **II. ENVIRONMENTAL COMPLIANCE**

15

16 Q. HAS MINNESOTA ADOPTED EMISSION STANDARDS THAT ARE MORE STRINGENT
17 THAN THE FEDERAL STANDARDS?

18 A. Generally speaking, with the exception of mercury, Minnesota has adopted
19 emission standards that are consistent with Federal standards. Under the Clean
20 Air Act, states have the authority to adopt standards that are more restrictive
21 than Federal rules. In recent years, Minnesota, through the Minnesota Pollution
22 Control Agency ("MPCA"), has chosen to adopt the Environmental Protection
23 Agency's ("EPA") approach on a number of key regulations, thus aligning
24 Minnesota's compliance standards with Federal requirements. For example,
25 Minnesota chose to adopt the Federal Implementation Plan for implementation
26 of the Clean Air Interstate Rule ("CAIR"), rather than to adopt a more stringent,

1 Minnesota-only program. Another example is that Minnesota chose to rule that
2 Best Available Retrofit Technology (“BART”) is equal to CAIR when
3 considering regional haze impacts in Minnesota. Therefore, it would not be
4 accurate to state that Minnesota has adopted emission standards that are more
5 stringent than the EPA’s Federal standards for emissions. Further, as will be
6 discussed below, even for the mercury emissions requirements, Minnesota
7 standards will soon be consistent with Federal standards.
8

9 Q. MR. KING, AT PAGE 6, TESTIFIES THAT MINNESOTA STANDARDS FOR
10 PARTICULATES AND SULFUR DIOXIDE ARE MUCH MORE STRICT THAN THE EPA
11 STANDARDS. IS THIS ACCURATE?

12 A. No. Minnesota’s standards for these emissions are generally similar to the
13 Federal standards. In fact, Mr. King’s Exhibit__(CWK-1) lists both the
14 Minnesota and the EPA standards for Total Particulate Matter, Opacity, Sulfur
15 Dioxide (“SO₂”), NO_x, and Particulate Matter as less than 10 Microns. This
16 Exhibit shows that none of the Minnesota standards are higher than the EPA
17 standards.
18

19 Q. PLEASE DESCRIBE THE BACKGROUND AND STATUS OF THE EPA’S MERCURY
20 STANDARDS.

21 A. The EPA promulgated the Clean Air Mercury Rule (“CAMR”) on May 18, 2005.
22 CAMR established a national cap-and-trade program for mercury emissions from
23 coal-fired electric generating units with capacities greater than 25 MW. Under
24 CAMR, affected units would have been required to either reduce their mercury
25 emissions or purchase sufficient allowances on the open market for each ounce
26 of mercury emitted each year, beginning in 2010. CAMR based the annual

1 mercury allowance allocations on a national mercury emission cap of 38 tons per
2 year during Phase I (2010-2017) and a cap of 15 tons per year in Phase II (2018
3 on), working from a baseline of 48 tons per year. In addition, all affected units
4 were required to begin continuous monitoring of mercury emissions by
5 January 1, 2009.
6

7 Q. HOW DID THE COMPANY PLAN TO COMPLY WITH CAMR?

8 A. The Company has eight units that were subject to the CAMR. Our strategy for
9 complying with Phase I of CAMR was to install mercury emission controls on
10 our largest units and over-control those units, producing enough excess
11 allowances to cover the smaller remaining units. Specifically, the Company
12 planned on installing mercury controls on Sherco 3 in 2009 and on King 1 in
13 2010 and maximizing mercury control on these units, providing sufficient
14 reductions to comply with the annual allowance allocations for our entire
15 Minnesota coal plant fleet. Our plan was to evaluate the level of mercury
16 removal rates on these units to determine whether to invest in mercury controls
17 on additional units. Our plan also included monitoring how the mercury
18 allowance market developed to determine whether purchasing mercury
19 allowances as a compliance option was more cost-effective than controlling
20 mercury emissions. For our initial planning purposes, we assumed an allowance
21 cost estimate of \$35,000 per pound of mercury emitted, the “safety valve” price
22 proposed by the EPA in the CAMR rulemaking process. That cost was selected
23 as a base value until the market actually materialized.
24

25 In 2018, Phase II of the CAMR was to begin, and mercury allowance allocations
26 for all units would be reduced. Our strategy was to continue to evaluate whether

1 to add controls on other units or to purchase allowances in order to comply with
2 Phase II of CAMR.

3
4 Our above-outlined strategy was the lowest-cost control option available to us.
5 The economies of scale achieved through installation of mercury emission
6 controls at our largest units were the most cost-effective method available to us,
7 given the cost of mercury emission controls at these facilities and our estimates
8 of future emission allowance prices.

9
10 Q. WHAT IS THE CURRENT STATUS OF CAMR?

11 A. On February 8, 2008, the D.C. Circuit Court of Appeals vacated CAMR, finding
12 that EPA had not provided the necessary evidence under the Clean Air Act
13 Delisting Rule to exempt mercury from the higher standards under Section 112
14 of the Clean Air Act. On March 24, 2008, the EPA filed a petition asking for
15 review by the full D.C. Circuit to re-hear the decision to vacate CAMR. The
16 Court of Appeals denied this petition. The EPA or other intervenors may appeal
17 this decision.

18
19 While the appeals process is still working itself out, by vacating CAMR and the
20 Delisting Rule, the EPA is required under Clean Air Act Section 112 to move
21 forward with the development of a new maximum achievable control technology
22 (“MACT”) rule. This requirement has two consequences. First, this new MACT
23 rule would apply to each affected unit, rather than allocating allowances to offset
24 emissions at some facilities through a trading program. Second, the MACT rule
25 will be prescriptive in nature, requiring installation of emission control
26 equipment at each of eight facilities.

1 EPA's MACT standards are based on the emissions levels already achieved by
2 the best-performing similar facilities. For existing sources, the MACT floor must
3 equal the average emissions limitations currently achieved by the best-performing
4 12 percent of sources in that source category, if there are 30 or more existing
5 sources. If there are fewer than 30 existing sources, then the MACT floor must
6 equal the average emissions limitation achieved by the best-performing five
7 sources in the category. Based on my review of the industry, it appears that the
8 best-performing sources, using either the top 12 percent or the top fives sources,
9 would equate to a 90 percent removal rate. Although this approach is subject to
10 change, the EPA is expected to propose a Utility MACT standard within 12
11 months, which would result in final rules being effective in 2010.

12
13 Q. HOW WOULD A NEW MACT RULE AFFECT THE COMPANY?

14 A. The Company expects to have eight units subject to this rule when it is issued.
15 These are the same eight units that would have been subject to CAMR.
16 However, unlike CAMR, the new MACT standard will require maximum
17 achievable emissions reductions at each unit rather than allowing some units to
18 over-control and others to do nothing. In this way, MACT will be more
19 restrictive and expensive than CAMR.

20
21 Q. HOW DID CAMR COMPARE TO MERCURY REQUIREMENTS IN MINNESOTA?

22 A. In 2006, the Minnesota Legislature enacted the Minnesota Mercury Emission
23 Reduction Act of 2006 ("MMERA"). The MMERA requires a public utility that
24 owns a dry-scrubbed or wet-scrubbed coal-fired electric generation unit with
25 capacities greater than 100 megawatts (MW) to propose the use of available
26 technology for mercury removal that is most likely to result in the removal of 90

1 percent of the mercury emitted from the unit. In addition, affected units under
2 this program are required to begin continuous monitoring of mercury emissions
3 by July 1, 2007.

4
5 After enactment of the MMERA, the MPCA chose to adopt the Federal
6 Implementation Plan for implementation of the CAMR, rather than adopt the
7 more stringent approach it was considering. By doing this, Minnesota chose to
8 allow full trading of mercury allowances, something many other states did not
9 allow. The availability of these allowances would have enabled us to use higher-
10 than-required emission reductions at one plant to offset higher emissions at
11 another plant. This increased flexibility lowered the cost of compliance for our
12 customers.

13
14 Q. HOW DOES THE MMERA COMPARE TO CAMR AND THE FUTURE MACT?

15 A. The MMERA is slightly more restrictive than the vacated CAMR rule. However,
16 it will be less restrictive than the future MACT rule that EPA is expected to
17 promulgate. Based on how EPA has applied previous MACT standards to other
18 industries, the new mercury MACT standard will require maximum achievable
19 emissions reductions at each unit rather than allowing some units to over-control
20 and others to do nothing. In this way, MACT will be more expensive to comply
21 with than either CAMR or MMERA. The below table shows a side-by-side
22 comparison of the three regulatory approaches.

1

Table 1

2

Comparison of Mercury Control Requirements

3

	CAMR	MMERA	MACT
Number of Xcel Energy Facilities Affected	8	4	8
Names of Affected Units	Black Dog 3, Black Dog 4, King 1, Minnesota Valley 3, Riverside 8, Sherco 1, Sherco 2, Sherco 3	King 1, Sherco 1, Sherco 2, Sherco 3	Black Dog 3, Black Dog 4, King 1, Minnesota Valley 3, Riverside 8, Sherco 1, Sherco 2, Sherco 3
Regulatory Description	Cap-and-Trade, maintain sufficient allowances to cover emissions from affected units	Each affected unit shall propose to employ the technology most likely to achieve 90% reduction	Each affected unit shall install MACT (to achieve 90% reduction)
Compliance Timeline	Phase I in 2010 (national cap of 38 tons), Phase II in 2018 (national cap of 15 tons)	Install controls on one dry scrubbed unit by 12/31/2009, install controls on 2nd dry scrubbed unit by 12/31/2010, install controls on wet scrubber units by 12/31/2014	Install MACT controls by regulatory deadline (expected by 2010)

4

5

6

7

8

1 Q. YOU HAVE DISCUSSED THREE MERCURY REDUCTION REGIMENS. ARE THERE ANY
2 IMMEDIATE DIFFERENCES IN FINANCIAL IMPACTS THAT RESULT FROM THESE
3 REQUIREMENTS?

4 A. No. The mercury control technology selected for compliance with CAMR,
5 MMERA, or MACT is basically the same. In general, a sorbent injection system
6 would be used to remove 60 to 90 percent of the mercury emitted from these
7 units. Under CAMR, the Company planned on installing mercury controls on
8 Sherco 3 in 2009 and on King 1 in 2010 and maximizing mercury control on
9 these units to meet our annual allowance allocation. Additional controls or
10 allowance purchases will be required by 2018 to comply with the second phase of
11 CAMR when the allowance allocations are reduced. Under MMERA, the
12 Company is required to propose to employ the available technology for mercury
13 removal that is most likely to result in the removal of 90 percent on Sherco 3 and
14 King 1 by December 31, 2009 for one unit and by December 31, 2010 for the
15 second unit. MMERA also requires the Company to propose to employ the
16 available technology for mercury removal that is most likely to result in the
17 removal of 90 percent on Sherco 1 and 2 by December 31, 2014. While the
18 MACT rule has not been published, the requirements of MACT are expected to
19 require 90 percent (or higher) removal from all coal-fired units greater than 25
20 MW, including King 1, Sherco 1, 2 and 3, as well as the other coal-fired units in
21 our system.

22

23 As stated above, a sorbent injection system would be used to remove 60 to 90
24 percent of the mercury emitted from each of these units. Therefore, the capital
25 costs for a mercury removal system to satisfy the MMERA, CAMR or a Federal

1 MACT standard would be all the same. Additionally, those capital costs are not
2 included in the current test year for this proceeding.

3
4 Q. WHAT DO YOU CONCLUDE WHEN COMPARING MINNESOTA'S ENVIRONMENTAL
5 STANDARDS TO THE FEDERAL STANDARDS?

6 A. For all emissions except for mercury, Minnesota's standards are consistent with
7 Federal standards. For mercury, Minnesota's current emission standards are
8 actually less restrictive than the soon-to-be-implemented Federal standards.
9 Further, there is no current difference in financial impact on customers,
10 regardless of which requirement is considered.

11
12 Q. PLEASE COMMENT ON MR. KING'S PROPOSAL TO DISALLOW \$268,000 BASED ON
13 THE ASSUMPTION THAT THE COMPANY IS SPENDING THAT AMOUNT TO COMPLY
14 WITH A HIGHER MINNESOTA STANDARD.

15 A. As I have indicated, the same technology will be used to meet any mercury
16 standard – Federal or state; thus the costs of implementing a mercury control
17 system is the same under either requirement. The primary difference in cost due
18 to the MMERA will be the amount of sorbent injection needed to meet the
19 standard. However, those costs are not included in the 2008 test year budgets as
20 they are future O&M costs that will be incurred after implementation of the
21 projects.

22
23 The only additional cost in 2008 used to meet Minnesota requirements is the
24 \$12,335 for monitoring mercury emissions. These are necessary compliance
25 costs, and the information provided through monitoring is useful to the

1 Company in designing and managing future state and Federal compliance efforts
2 for mercury.

3
4 **III. MERP**

5
6 Q. PLEASE DISCUSS THE ENVIRONMENTAL COMPLIANCE BENEFITS ACCRUING FROM
7 THE COMPANY'S MERP PROJECTS AT THE KING, HIGH BRIDGE AND RIVERSIDE
8 PLANTS.

9 A. The MERP projects provide a number of benefits. First, because the program
10 met Best Available Control Technology ("BACT") for SO₂, NO_x and particulate
11 matter ("PM"), it significantly reduces the risk of additional environmental
12 improvements that would have been required with any future plant activities.
13 For example, Company environmental staff regularly reviews proposed plant
14 projects to determine if a project results in emissions increases that would trigger
15 New Source Review ("NSR") requirements. One of these requirements is the
16 installation of BACT. Because of the uncertainties associated with the NSR
17 program, any improvement project has the risk of triggering NSR requirements.
18 If an environmental regulator disagrees with our determination of whether a
19 project triggered NSR, that project would then have to go through the full NSR
20 process, including the installation of BACT. If a plant already has BACT, the
21 potential financial and operational risk is much lower than for a facility without
22 BACT in place.

23
24 Second, the projects will lower emissions of all pollutants. The MERP facilities
25 were consistently on the list of the five highest emitters in Minnesota. As a
26 result, they were subject to high environmental regulatory scrutiny.

1 Third, the rehabilitated or new facilities will be more efficient generators of
2 electricity. As a result, these units will have lower emission rates per unit of
3 energy produced, typically measured in pounds per megawatt-hour (lb/MWh).

4
5 Finally, MERP activities, specifically at gas-fired plants, eliminate the fugitive
6 dust issues associated with coal handling, ash handling and coal trains.

7
8 Q. ARE THE EMISSION REDUCTIONS IMPLEMENTED THROUGH MERP CONSISTENT
9 WITH FEDERAL STANDARDS?

10 A. Yes. The MERP projects have prepared us well for compliance with Federal
11 rules and regulations that have since been implemented. Since the Company's
12 MERP proposal was proposed and approved, the following new environmental
13 regulations have been adopted:

- 14 • Clean Air Interstate Rule (CAIR) – Federal rule (May 2005),
- 15 • Clean Air Mercury Rule (CAMR) – Federal rule (May 2005) [vacated in
16 February 2008],
- 17 • BART Determinations under the Regional Haze Rule – Federal rule (July
18 2005),
- 19 • Minnesota Mercury Emission Reduction Act of 2006 – Minnesota Law (May
20 2006).

21
22 Of these rules, CAMR and MMERA regulate mercury emissions in an effort to
23 reduce the human health impacts from these emissions. As discussed above, the
24 soon-to-be-implemented Federal rules addressing mercury emissions will exceed
25 the vacated CAMR requirements. The CAIR and Regional Haze rules regulate
26 emissions of SO₂ and NO_x in an effort to reduce health impacts from formation

1 of ground-level ozone from NO_x emissions and fine particulate matter (PM_{2.5})
2 from SO₂ and NO_x emissions.

3
4 As a result of the MERP projects, Xcel Energy is now well positioned to comply
5 with these rules. For example, when completed, the MERP projects will reduce
6 NO_x emissions by over 20,000 tons per year and SO₂ emissions by over 30,000
7 tons per year. Absent MERP, Xcel Energy would have needed to propose
8 additional NO_x and SO₂ emission reduction projects of at least those amounts to
9 comply with these Federal rules.

10
11 The Company also would have needed to implement mercury emission
12 reductions at the MERP facilities had the MERP retrofits and replacements not
13 taken place. Of the three MERP facilities, only the King Plant will require
14 installation of mercury controls under state and Federal rules. By converting the
15 High Bridge and Riverside Plants to natural gas plants, we have removed these
16 units from being subject to the state and Federal mercury rules, thus avoiding the
17 cost of complying with mercury requirements at the High Bridge and Riverside
18 Plants. As I discuss below, it has been our experience that the cost of acquiring
19 the necessary technology is significantly higher if it is implemented after the
20 standards take effect.

21
22 Q. MS. ENGELKING'S REBUTTAL TESTIMONY DISCUSSES THE DIFFULTIES OF
23 PERMITTING THE COAL-BASED REPOWERING ALTERNATIVE FOR THE HIGH
24 BRIDGE PLANT. CAN YOU PROVIDE ADDITIONAL DETAIL ON THIS?

25 A. Yes. As discussed by Ms. Elizabeth Engelking, we considered a coal-based
26 option when evaluating our MERP proposal. Continued use of coal at this

1 facility would have entailed higher levels of almost all emissions, including
2 mercury, SO₂, NO_x, particulates, and fugitive dust associated with coal and ash
3 handling. Although a coal option was considered, it was not a practical long-
4 term option for this location. The High Bridge facility is located in the center of
5 a densely populated urban environment. In general, communities throughout
6 the country are no longer comfortable with these types of facilities located within
7 their urban cores. This general resistance was reflected by the MPCA in its
8 evaluation of the coal option at this site. As discussed in Ms. Elizabeth
9 Engelking's Rebuttal Testimony, initially, the MPCA rejected our coal alternative
10 plan for High Bridge as not satisfying the EPA BACT requirements. While the
11 MPCA modified its position on whether the coal alternative would satisfy the
12 relevant EPA and MPCA pollution requirements, it concluded that keeping the
13 plant on coal was not the most cost effective way to proceed. This contrasts
14 with our experience at the King facility, where the issues associated with coal-
15 fired generation in a densely populated urban environment were not present.

16
17 Q. IN WHAT WAYS WERE THE COMPANY'S MERP PROGRAM CONSIDERED COST-
18 EFFECTIVE COMPLIANCE WITH ENVIRONMENTAL REGULATIONS?

19 A. The Company's MERP program resulted in significant emission reductions from
20 the MERP facilities. The MPCA addressed the question of cost-effectiveness
21 from an environmental perspective in their review of the proposal. First, they
22 applied the test of cost-effectiveness in the manner prescribed for completing a
23 BACT analysis. The MPCA concluded that the midpoint of the range of cost
24 per ton of pollutant removed from the primary MERP proposal was \$688 per
25 ton, while that for the Alternative Project was \$830 per ton. At the time the
26 project was reviewed, the MPCA stated that "Generally, pollution controls are

1 found to be cost-effective, unless their cost exceeds \$6,000-\$10,000 per ton of
2 pollutant removed, depending on the pollutant be evaluated.”¹ Second, the
3 MPCA concluded in their review of the MERP projects that the quantified
4 benefits of the project are equal to or likely to exceed the project cost.² This
5 determination was made by looking at a combination of externality values and
6 health effects information. From this information alone, the case can be made
7 that the projects were cost-effective.

8
9 As indicated earlier in my testimony, the MERP projects have positioned us for
10 compliance with Federal rules and regulations that were not proposed at the time
11 the MERP project was being developed, specifically CAIR. The CAIR
12 allocations of NOx for the King, High Bridge and Riverside plants total 5,881
13 tons per year. To achieve this level of emissions, these three plants combined
14 would have needed to reduce their annual NOx emissions by over 20,000 tons
15 per year or to obtain enough NOx allowances on the open market to cover this
16 20,000-allowance shortfall. Using allowance cost data from trade publications,
17 this shortfall equates to \$52 million to \$96 million per year in allowance purchase
18 costs, assuming prices of \$2600 to \$4800 per allowances for 2009 and 2010
19 vintage NOx allowances. In comparison, the King NOx control device cost on
20 the order of \$60 million, roughly equivalent to a single year of allowance
21 purchases. From this perspective, the emissions reductions for NOx compliance
22 alone are very cost-effective.

23

¹ Minnesota Pollution Control Agency Supplemental Comments at the October 2, 2003 Information Meeting on the Xcel Energy Metropolitan Reduction Project, at page 3, filed October 23, 2003 in MPUC Docket No. E002/M-02-633. Available at <http://www.pca.state.mn.us/publications/reports/xcel-metroreductionproject.pdf>

² *Id.*

1 Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE COMPANY'S MERP
2 PROGRAM.

3 A. It is clear that the Company's MERP program did not result in over-compliance
4 compared to Federal emission standards. Rather, the emission compliance
5 activity implemented through MERP resulted in cost-effective compliance with
6 Federal emission requirements. The benefits of this progressive strategy will be
7 discussed in detail below. Further, the Company's strategies at King, High
8 Bridge and Riverside were designed to meet the specific needs of each location,
9 resulting in gas-fired generation in a densely populated location and coal
10 generation in a location more removed from an urban center.

11
12 **IV. BENEFITS OF XCEL ENERGY'S ENVIRONMENTAL STRATEGY**
13

14 Q. WHAT IS THE COMPANY'S ENVIRONMENTAL STRATEGY?

15 A. Xcel Energy's strategy is to anticipate changing environmental requirements and
16 implement effective technologies that will allow us to reduce emissions and risk
17 in a prudent and planned manner.

18
19 Q. WHY HAS THE COMPANY FOUND IT COST-EFFECTIVE TO ANTICIPATE
20 ENVIRONMENTAL REQUIREMENTS?

21 A. We find that by anticipating environmental requirements, we improve our ability
22 to plan and budget, rather than to simply react to each regulatory requirement.
23 For instance, the former NSP carefully investigated the benefits of switching
24 from Illinois bituminous coal to low sulfur western coal in the 1970's and 1980's,
25 and, as a result, made that switch. By adopting this technology shift early on, we
26 were much better positioned for the Clean Air Act Amendments of 1990. These

1 types of approaches enable us to better plan and budget for upcoming regulatory
2 programs.

3
4 Another example of anticipating environmental requirements is the addition of
5 NOx controls prior to Phase II of the Acid Rain Program. By installing low
6 NOx burner (“LNB”) technology on Unit 2 at the Sherburne County Generating
7 Plant and overfire air (“OFA”) technology at the King Plant prior to the
8 regulatory due dates, the Company was able to comply with these provisions
9 with minimal expenditures across the rest of the coal plant fleet. This use of a
10 system NOx averaging approach provided a substantial economic benefit to our
11 customers when compared to installing NOx controls on each coal-fired unit in
12 our system.

13
14 Finally, and most relevant to this proceeding, the Company proactively
15 implemented emission improvements through MERP that, as described above,
16 resulted in cost-effective compliance with Federal emission requirements.

17
18 Q. WHY WAS EARLY IMPLEMENTATION OF EMISSION REDUCTIONS THROUGH MERP
19 SUPERIOR TO A WAIT-AND-REACT APPROACH TO EMISSION COMPLIANCE?

20 A. I believe that a wait-and-react approach would have significantly raised
21 compliance costs. Several major problems would have been encountered had we
22 waited, including:

- 23 • Scheduling all of the required outages in a short period of time,
- 24 • Arranging engineering services for all of these projects while the rest of
25 the utility industry is engaged in the same activities,

- 1 • Allocating capital for pollution control equipment over this short period
- 2 of time without getting any additional generation capacity with these
- 3 projects, and
- 4 • Payment of higher prices for the materials and services because of higher
- 5 demand and shortened planning windows.

6

7 In short, absent MERP, the emission reductions that ultimately would have been

8 implemented would have required significant expenditures with none of the

9 benefits discussed by Ms. Engelking in her Rebuttal Testimony. This is the

10 clearest example of the benefits of foresighted compliance with emission

11 standards.

12

13 Q. WILL THE COMPANY CONTINUE TO IMPLEMENT A STRATEGY OF PROACTIVE

14 COMPLIANCE WITH REGARD TO EMISSION COMPLIANCE?

15 A. While it is not the Company's intent, nor is it possible to anticipate every new

16 environmental compliance requirement, we do believe that a continued proactive

17 approach is merited. Thus far, our strategy has provided significant financial,

18 operational and environmental benefits to our customers. An example of these

19 significant benefits to our customers is the NOx reduction strategy for

20 compliance with the CAIR allowance program. As I explained earlier, our

21 installation of NOx controls at the King Plant, together with the conversion to

22 natural gas at High Bridge and Riverside, provides savings of between \$52

23 million to \$96 million per year in avoided allowance purchase costs. Our

24 customers will continue to benefit each year from these avoided compliance

25 costs and the reduced emissions to our environment. We will continue to

1 carefully monitor environmental regulatory activity and initiatives, so that we can
2 make prudent emission compliance decisions on behalf of our customers.

3
4 **V. SUMMARY AND CONCLUSIONS**
5

6 Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

7 A. Xcel Energy's environmental strategy is to anticipate changing environmental
8 requirements and implement effective technologies in a prudent and planned
9 manner. Our customers have and will continue to benefit from this approach.
10 Furthermore, while anticipating changing environmental requirements, we have
11 not over-complied with air- quality standards. The appearance of over-
12 controlling mercury emissions in Minnesota is a temporary issue that will be
13 resolved with final mercury standards. Finally, the MERP program has proven
14 to be consistent with our efforts to anticipate and cost-effectively respond to
15 changing environmental regulations.

16
17 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

18 A. Yes, it does.

1 STATE OF NORTH DAKOTA
2 BEFORE THE
3 PUBLIC SERVICE COMMISSION
4
5


6 In the Matter of the Application of Northern)
7 States Power Company, a Minnesota Corporation)
8 For Authority to Increase Rates for Electric Service) Case No. PU-07-776
9 in North Dakota)

10
11
12
13 **AFFIDAVIT OF**
14 **Richard A. Rosvold**
15

16
17 I, the undersigned, being duly sworn, depose and say that the foregoing is
18 the Rebuttal Testimony of the undersigned, and that such Rebuttal Testimony and
19 the exhibits or schedules sponsored by me to the best of my knowledge,
20 information and belief, are true, correct, accurate and complete, and I hereby adopt
21 said testimony as if given by me in formal hearing, under oath.
22

23 
24 _____
25 Richard A. Rosvold
26

27
28
29
30 Subscribed and sworn to before me, this 12th day of June, 2008.
31

32 
33 _____
34 Notary Public
35
36

