

FROM: Northern States Power Company
 Minneapolis, Minn. - 55401
 A. V. Diekhart

DATE OF DOCUMENT: Oct. 15, 1971	DATE RECEIVED: Oct. 18, 1971	NO.:
LTR. X	MEMO:	OTHER:

TO: **Mr. Harold L. Price**

ORIG.:	CC:	OTHER:
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ACTION NECESSARY <input type="checkbox"/>	CONCURRENCE <input type="checkbox"/>	DATE ANSWERED:
NO ACTION NECESSARY <input type="checkbox"/>	COMMENT <input type="checkbox"/>	BY:

CLASSIF: **U** POST OFFICE REG. NO:

FILE CODE: **50-263 (ENVIRO FILE)**

DESCRIPTION: (Must Be Unclassified)
Ltr submitting pursuant to Sec E of App D Part 50 re "SHOW CAUSE" trans t following:

REFERRED TO	DATE	RECEIVED BY	DATE
Knuth w/4 cys for ACTION	10-18-71	DeYoung Denton	

ENCLOSURES:
Monticello Nuclear Generating Plant Statement to AEC Pursuant to Sec E of App D to 10 CFR 50 dated 10-15-71 showing reasons why Monticello Plant should not be suspended w/exhibits 1 thru 9.....
Filed in Rpts Jacket
(50 cys encl rec'd)

REFERRED TO	DATE	RECEIVED BY	DATE
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REMARKS:
HOLDING 3 CYS FOR ACRS

Morris/Schroeder/T.R. Wilson L. Rogers E. Case L. Johnson Thornton		ACKNOWLEDGED DO NOT REMOVE 4000	
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NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

October 15, 1971

Regulatory

File Cy.

Mr Harold L Price
Director of Regulation
United States Atomic Energy Commission
Washington, DC 20545

Dear Mr Price:

MONTICELLO NUCLEAR GENERATING PLANT E-5979
Operating License DPR-22

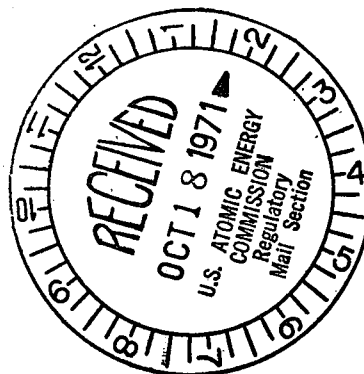
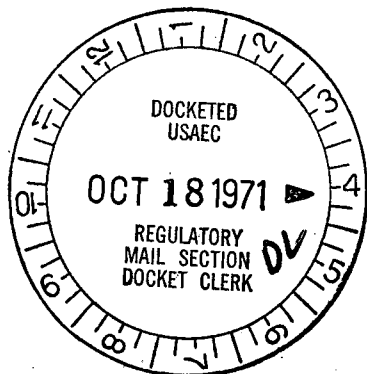
Under the provisions of Section E.3 of Appendix D to 10 CFR Part 50, we are furnishing 50 copies of written statements of reasons, with supporting factual material, why the Monticello Operating License DPR-22 should not be suspended, in whole or in part, pending completion of the NEPA environmental review specified in Section B of Appendix D.

Yours very truly,

A V Dienhart
Vice President - Engineering

AVD/lb

Cc: D E Nelson
Gerald Charnoff



DL

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NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

Regulatory

File Cy.

October 15, 1971

50-263
50-282
50-306

Filed w/No. Dated 10-29-71



Mr Harold L Price
Director of Regulation
United States Atomic Energy Commission
Washington, DC 20545

Dear Mr Price:

MONTICELLO NUCLEAR GENERATING PLANT E-5979
Operating License DPR-22

Under the provisions of Section E.3 of Appendix D to 10 CFR Part 50, we are furnishing 50 copies of written statements of reasons, with supporting factual material, why the Monticello Operating License DPR-22 should not be suspended, in whole or in part, pending completion of the NEPA environmental review specified in Section B of Appendix D.

Yours very truly,

A V Dienhart

Vice President - Engineering

AVD/lb

Cc: D E Nelson
Gerald Charnoff

Subscribed and sworn to before me

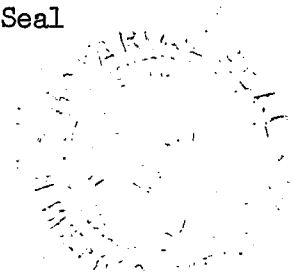
this 15 day of October, 1971.

John J. Smith
John J Smith

Notary Public, Hennepin County, Minnesota

My Commission Expires March 3, 1976

Notarial Seal



4778

MONTICELLO NUCLEAR GENERATING PLANT

STATEMENT

TO

Received w/Ltr Dated 10-15-71

U.S. ATOMIC

ENERGY COMMISSION

PURSUANT TO SECTION E OF APPENDIX D

TO 10 CFR PART 50

NORTHERN STATES POWER COMPANY

OCTOBER 15, 1971

INTRODUCTION

Pursuant to Section E of Appendix D to 10 CFR Part 50, Northern States Power Company (NSP) is furnishing this written statement of reasons with supporting factual submission, why, with reference to certain criteria, operating license DPR-22 authorizing operation of the Monticello Nuclear Generating Plant, should not be suspended, in whole or in part, pending completion of the U S Atomic Energy Commission (AEC) review required for implementation of the National Environmental Policy Act of 1969 (NEPA). In addition, pursuant to Section B of Appendix D, NSP expects to submit by November 8, 1971, a document entitled "Applicants Environmental Report".

Under the AEC revised regulations implementing NEPA, it will probably take substantial time to complete the environmental review. In order to reasonably describe the consequences due to postulated suspension of operating license DPR-22, a review period of one year beginning in November 1971 has been assumed.

Based on information in this part E reporting, it is obvious that operation of the Monticello Nuclear Generating Plant during the review period will not create significant adverse impacts on the environment. Operation during the review period will not foreclose adoption of alternatives in facility design that could result from the NEPA review. Furthermore, a severe impact on the public interest would be created by the suspension. Based on the preceding it can be concluded that the Monticello operating license should not be suspended in whole or in part pending completion of the NEPA environmental review.

GENERAL INFORMATION

The Monticello Nuclear Generating Plant is owned and operated by NSP and has been authorized by AEC to operate at power levels up to 1670 Mwt. The

plant, constructed pursuant to construction permit CPPR-31, utilizes a boiling water reactor designed and furnished under a turnkey contract by the General Electric Company. The plant, with a net electrical output of 545 Mwe, was constructed by the Bechtel Corporation. The initial fuel loading and successive fuel loadings for a period of ten years are being furnished by General Electric Company under a "heat content" purchase agreement.

NSP is a public utility which furnishes various utility services, principally electric, in central and southern Minnesota including the cities of Minneapolis and St Paul and parts of North Dakota and South Dakota. A wholly owned subsidiary (NSP-Wis) furnishes utility services in west central Wisconsin. The company's total generating capability, including the Monticello Plant, is 3436 Mw and the peak load that has occurred to date is 3,301 Mw. The company is a member of the Upper Mississippi Valley Power Pool which was formed in 1961 and is also a member of Mid-Continent Area Power Planners (MAPP) organized in 1963, which now includes fifty-four electric power suppliers operating in ten states and the Province of Manitoba. For additional financial and corporate information see Exhibit 1, the NSP 1970 Annual Report.

In January 1966, the company held discussions with the staff of the AEC Division of Reactor Licensing, on the suitability of the Monticello site. A presentation of the proposed use of the Monticello site was made to the DRL staff in March 1966 and in May 1966 a description of the site and proposed plant was included in a presentation to the Advisory Committee on Reactor Safeguards (ACRS). In July 1966 NSP submitted an application to AEC for a construction permit for the Monticello Plant. At the same time information copies of the application were sent to the Minnesota Water Pollution Control Commission (now Minnesota Pollution Control Agency - MPCA), the Minnesota Department of Conservation (now Minnesota Department of Natural Resources - MDNR),

Minnesota Department of Health, and to the Board of County Commissioners of Wright County where the plant is located. A public hearing on the AEC construction permit was held in May 1967 and in June 1967 construction permit CPPR-31 was issued. In November 1968, NSP submitted an application to AEC for an operating license and also submitted the Final Safety Analysis Report (FSAR). The ACRS, in its January 1970 meeting concluded that the plant, subject to the certain stipulations, can be operated without undue risk to the health and safety of the public. Notice of an AEC public hearing in the matter was issued in March 1970. Hearing sessions were held intermittently over the following months continuing until November 1970. The Atomic Safety and Licensing Board on August 25, 1970 authorized issuance of an interim provisional operating license allowing fuel loading and operation ^{at} ~~of~~ the reactor of power levels not in ~~the~~ excess of 5 Mwt without the reactor head in place. Following issuance of the provisional operating license DPR-22 on September 8, 1970 fuel loading began and initial criticality was achieved on December 10, 1970. Subsequently operation at full power (1670 Mwt) was authorized and the plant was placed in commercial operation on June 30, 1971. For further details Exhibit 2 is included as a chronology of significant regulatory events.

IMPACTS DURING REVIEW PERIOD

Site Use

Except for recent small parcel acquisitions, NSP has owned the 1325 acre site since 1925. The site is located about three miles northwest of the Village of Monticello, Minnesota on a stretch of the Mississippi River that finds limited recreational use. Because of shallowness and presence of rapids the stretch of river adjacent to the plant is seldom used for fishing or boating. Exhibit 3 is an aerial photograph of the plant area and it shows the relatively

small area (about 50 acres) occupied by the plant and its supporting facilities. (During construction a larger area was involved for equipment lay down, parking, and construction force offices and shop buildings). No additional land use is contemplated during the review period. During construction every effort was made to preserve trees and maintain the site in its natural state. The facilities were given special architectural treatment in an attempt to blend them into the surroundings. Areas used for construction activities have been graded and are being allowed to return to their original natural state.

Transmission circuits to the plant are of 345, 230 and 115 Kv construction and are tied to the NSP interconnected transmission grid. The transmission towers and poles are aligned to minimize the effect on other land uses and where the lines traverse wooded areas a minimum of cutting and clearing has occurred. All transmission facilities from the plant were completed by July 1970. No additional facilities are planned for installation during the review period.

In February 1970 NSP entered into an agreement with the Federal Water Pollution Control Administration (now a part of Environmental Protection Agency) to allow use of a small portion of the Monticello site for the purpose of conducting field temperature studies on fish and biological organisms. Using warm water discharges from the Monticello Plant, controlled water temperature environments for the studies will be provided in a series of small canals. Construction work by the federal agency will soon be underway on these facilities and operation is expected to begin in 1972. This facility will not interfere with the environmental protection features of the plant and will provide valuable scientific information.

Because the Monticello plant is fully constructed, continued operation of the plant during the NEPA review period will not create any significant land use impacts on the environment.

Water Use

Records* show river flow at Monticello can be expected to exceed 1,100 cubic feet per second (cfs) 90% of the time and 300 cfs 99% of the time. The MDNR in March, 1970, issued a permit authorizing appropriation of Mississippi River water at a variable rate from 54 cfs to 645 cfs for a maximum total annual appropriation of about 467,000 acre-feet. A public hearing on the appropriation request was held in Buffalo, Minnesota. A copy of the resulting authorization is included as Exhibit 4.

The plant circulating water system is designed to allow several modes of operation taking into account river flow, temperature and climatic conditions. Two 9-cell induced-draft cross flow cooling towers (270 feet long by 59 feet ~~wide~~^{wide} by 61 feet high) are included in the plant circulating water system. Each tower is rated to remove 3.9×10^9 Btu per hour at a maximum flow of 645 cfs when the wet bulb temperature is 73°F. This full flow can be directed to the cooling towers in a helper cycle mode in which the full flow from the towers is discharged to the river. To take into account extremely low river flow conditions, the system can also be operated in a recirculation mode with an appropriation of about 54 cfs from the river and discharge of about 36 cfs back to the river with the difference accounted for by evaporation and windage losses in the tower.

Following a public hearing in April 1969 the MPCA issued permit No. 5633 (attached as Exhibit 5) which includes limits for thermal discharges to the river. This permit requires that the water discharged, after reasonable dilution and mixing in the river, shall not raise the temperature of the river more than 5°F over the ambient river temperature, except that in no case shall the river

* Data from hydrologic Atlas of Minnesota Bulletin 10, Minnesota Department of Conservation and from NSP company records at Whitney Steam Plant, St Cloud, Minnesota.

be raised above 90°F by the discharge of effluents. This summer the Monticello Plant began operating for substantial periods near maximum load with attendant thermal discharges to the river. This operation has allowed the conduct of thermal surveys with cooling towers in a helper mode of operation. These surveys, conducted in cooperation with the MPCA, will continue until appropriate data can be collected under various climatic and hydrologic operating conditions to allow establishment of the mixing zone provided for in the MPCA permit. As requested by the MPCA, the cooling towers are being operated to the maximum extent practicable until the mixing zone is established. These studies have shown, under summer conditions, that helper tower operation insures that within about 1,000 feet downstream from the plant the thermal plume temperature is less than 5°F above ambient. These same studies show that by the time the flow reaches the community of Monticello, three miles downstream, the plume temperature profile average reaches a level within 2°F of ambient. In this three-mile reach, the heated water travels close to the right bank of the river so that more than half of the stream profile is essentially unaffected by the warm water discharge. As reported in Exhibit 7, careful ecological monitoring for the first six months of operation, shows that influence of added heat in the river has not exceeded the effects of natural environmental changes.

The Monticello cooling tower system is not designed for operation during the severe Minnesota winters. Experience at other NSP plants has shown that the discharge of warm water during the winter will be beneficial to the river, particularly by enhancing recreational fishing and by ameliorating ice jams and similar problems during the spring ice breakup. Winter monitoring at NSP's Allen S King Plant has shown that the warm water mixes rapidly with the near freezing river water and that the aquatic environment is not adversely affected.

The plant river water intake facilities have been designed for low velocity flow of about 0.5 feet per second (fps) compared with an average river velocity of 4 fps to 5 fps. This minimizes the possibility of fish being taken up by the intake flow. River water is turned through an angle of 80° to approach the plant in a channel leading to the intake structure. In the intake structure the water passes through a trash rack followed by two parallel automatically-operated traveling screens. Prior to commercial operation of the plant, certain changes were made to the intake system to give further assurance of minimum fish damage potential. As a result of an understanding with the MDNR and the MPCA, wash water from the intake structure traveling screens is now returned directly to the river. In this way the few fish that might be carried by the traveling screens are returned unharmed to the river.

Chemical Releases

Non-radiological chemical wastes from the plant are directed to a holding pond for settlement and treatment, if required, prior to release to the river. The following table shows the limits specified in the MPCA permit compared to actual values of release as reported to the MPCA.

<u>Parameter</u>	<u>MPCA Permit</u>	<u>Actual Release</u>
pH	6.5 - 8.5	7.7
Turbidity Value	25 JTU	5.7
5 Day BOD	25 mg/l	0.8
Total Suspended Solids	30 mg/l	6.0

Ground Water

Two wells, each rated at 50 gpm, withdraw ground water from a depth of about 90 feet. A permit issued by the MDNR allows ground water appropriation at the rate of 100 gpm. This water is used for plant domestic needs and river intake

pump shaft sealing. Continuation of this withdrawal will have an unnoticeable effect on the nearest off-site wells located some distance from the two plant wells.

Radiological Impacts

1. Radwaste System Description

The conservative design of the Monticello radioactive waste systems results in discharges which are a small part of limits set forth in Part 20 of AEC regulations. A complete description of these systems is contained in the Monticello FSAR. The forthcoming Environmental Report will include a careful environmental assessment of these systems.

Liquid wastes are processed through the radwaste system on a batch basis. The radioactive and chemical contaminants are removed from the liquid waste streams either by filtration, or filtration followed by mixed deep bed demineralization and the liquid is returned to the primary system. Certain other low level liquid radwaste, if not feasible to recycle, is conducted to the discharge canal where dilution with circulating water occurs prior to discharge to the river. All liquid radwaste discharged from the plant is regulated on a batch-by-batch analysis basis. The batch is then discharged at a flow rate based on the dilution flow available at the time.

A feature of the gaseous radwaste system is a 30-minute holdup time to provide for radioactive decay of fission and activation gases. These decayed gases are released through a 100-meter-high stack after passing through high efficiency filters to remove 99.97% of the particulates over 0.3 microns in size.

The solid radwaste system relies on shipments of solids from the plant to AEC licensed off-site disposal facilities.

2. Operating Experience

For the first six-month operating period ending June 30, 1971 the radioactive releases from the plant were a small fraction of 1% of the Technical Specifications-allowed annual release limit. Normally the release data is summarized on a monthly basis in the six-month-report. Because the first reporting period includes the startup program (plant at low load factor), the following release percentages** are totals for the six-month reporting period. During the period liquid releases amounted to 4.5×10^{-6} percent. Related gaseous releases were 28×10^{-3} percent for noble gases and 12×10^{-2} percent for iodines and particulates. Solid wastes generated during the period had a total activity of 7.6 curies and all of this material was shipped off-site to an AEC approved disposal facility. Further data can be found in the Six-Month Operating Report No. 1 submitted to the AEC Division of Reactor Licensing on August 30, 1971.

On July 14, 1971 a series of events occurred, initiated by an equipment malfunction, that resulted in an unplanned gaseous release at a rate of about 35,000 micro curies per second ($\mu\text{ci}/\text{sec}$) through the main stack and about 2,000* $\mu\text{ci}/\text{sec}$ through the reactor building vent, which persisted for a period of about 30 minutes. This release was well within the Technical Specifications limit and was promptly reported to AEC. To reduce the possibility of recurrence of such an unplanned release, certain off-gas system changes have been made as outlined in our July 23, 1971 letter to the Division of Reactor Licensing. Furthermore a study is underway to determine if certain building ventilation systems can be altered to further control the dispersal of activity due to an

* Originally reported at 20,000 $\mu\text{ci}/\text{sec}$. Subsequent evaluation conducted jointly by NSP and AEC Division of Compliance representatives has shown the release rate to be 2,000 $\mu\text{ci}/\text{sec}$.

** Not including tritium.

October 29, 1971

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unplanned release from off-gas process equipment. Subsequent analysis of the July 14 release has shown the maximum integrated off-site dose to be about 0.033 millirem at the site boundary. Such a dose is insignificant compared to a natural background radiation of about 120 millirems per year in the Monticello area.

With the plant now operating for longer periods of time near maximum load, the amount of radioactivity released has increased slightly but still is less than a few percent of the Technical Specifications limits. During the review period it is expected that the radwaste releases will be less than 5% of the Technical Specifications limits.

The nearest public water supply using Mississippi River water is the Minneapolis-St Paul system about 35 miles downstream from the plant. As a result, liquid releases before discharge to the river must conform to the Technical Specifications limits on an instantaneous batch-by-batch basis without

the advantage of the annual averaging otherwise permitted by Part 20 regulations. Recent measurements by the Minnesota Department of Health and the St Paul Water Department show no increase in radioactivity in the St Paul water supply since Monticello began operation.

3. Safety Systems

Section 14 of the FSAR gives very detailed coverage regarding radioactive releases from postulated accidents. The adequacy of the safety analysis has been evaluated by both the DRL staff and the ACRS and was further considered in the AEC public hearing conducted during the summer of 1970. The matter will be further treated in the forthcoming Environmental Report to be submitted pursuant to Section B of Appendix D.

Evaluations conducted by AEC during the licensing procedures utilized very conservative assumptions. With more realistic assumptions, as justified by the defense-in-depth design concept used for Monticello, the probability of an accident occurring is extremely small and therefore the environmental risk is exceedingly low. For further assurance the AEC recently issued interim acceptance criteria for emergency core cooling systems (ECCS) for light water power reactors. Accordingly, on September 21, 1971, NSP furnished analysis information to confirm that the performance of the Monticello ECCS is in compliance with the above mentioned criteria.

4. Transportation

It is not planned to ship irradiated fuel from the Monticello plant during the review period. Certain shipments of miscellaneous solid waste material will be made from the plant during the review period. These shipments will be in accordance with AEC and Department of Transportation regulations and will be handled by Atcor, Incorporated with disposal at the AEC licensed facility at Sheffield, Illinois. Taking into account the relatively low activity level of

the shipments contemplated during the review period, and the very remote possibility of accidental release, no significant environmental impacts can be expected.

Conclusions

Based on plant operating data and data from the ongoing environmental monitoring program it can be concluded that radioactive releases from the plant are not causing any significant adverse impact on the environment. Complete in-plant monitoring and continuation of the very comprehensive environmental monitoring program will assure detection of incipient adverse environmental impacts, if any occur, during continued operation of the plant. When considering the effect of low level radiation on the environment, time becomes an important element. Current knowledge indicates that the present low levels of radiological release from the plant will not have a significant adverse impact even if continued for the life of the plant. However even if reduction in these low levels is deemed desirable as the result of the NEPA review, the added increment of radiation during the review period will be inconsequential and its effects unmeasurable.

Other Impacts

Sanitary sewage from the plant is collected and treated in a system utilizing a 7,000 gallon septic tank and a drain field approved by the Minnesota Department of Health.

Only minor amounts of combustion products will be released deriving from the plant heating boiler, emergency diesel generators, and diesel engines driven emergency and fire pumps. The emergency diesel equipment is tested on a monthly basis involving only a few hours of running time per month. The plant heating boiler and all of the diesel driven equipment utilize light fuel oil. The air quality regulations of the MPCA recognize this type of combustion as a minimal source of air pollutants. These impacts are negligible in comparison to a typical large industrial activity involving year around operation of combustion equipment.

Noise produced by operation of the plant is minor compared to a typical industrial operation of the same scale. The nearest residence is 2750 feet away and the nearest public roadway, State Highway 152, is about 3,000 feet from the reactor building. To date no noise complaints have been received and no increase in noise is expected during the review period.

The plant operating staff of about 70 persons has not created any significant burden on the community facilities such as housing and schools. No increase in the size of this staff is contemplated during the review period.

ENVIRONMENTAL MONITORING

A comprehensive environmental monitoring program was carried out for several years before the Monticello plant was placed in operation. Certain additions were made to the program during the preoperational period and now that the plant is operational more frequent sampling is in effect. A general description of the environmental monitoring program is included as Exhibit 6. Annual Reports covering all the data collected in the program are issued to AEC and other appropriate federal and state agencies.

The non-radiological portion of the environmental program is primarily directed at an assessment of the thermal impact of the plant based on information about the benthic organisms and fish living in the river. Analysis of data collected since plant operations began shows some statistically significant differences. However these differences are primarily of academic interest and do not mark any ecological change, and cannot form a basis for concluding that operation of the plant has caused a significant ecological change. Interim reports by consultants involved with the ecological portion of the monitoring program are included as Exhibit 7 and 8. Although continued operation of the plant during the review period is not expected to cause significant adverse impacts, the monitoring program will allow detection of incipient effects and prompt corrective action can be taken.

Furthermore in the unlikely event that any adverse effects might arise due to thermal discharges, such effects are not irreversible.

The radiological portion of the monitoring program is also described in Exhibit 6. This program is a cooperative effort involving NSP and the Minnesota Department of Health. The MPCA is also involved and certain changes in the program have been made at the request of the MPCA. The scope of the program was reviewed by the U S Public Health Service and the AEC. Furthermore the license Technical Specifications describe the program and therefore it is subject to regulation by AEC. Reporting on the radiological program for the six-month period ending June 30, 1971 is covered in Section VI of the Six Month Operating Report No. 1 recently submitted to DRL.

FORECLOSURE OF ALTERNATIVES

With the Monticello plant built and in operation, it should be obvious that continued operation will not foreclose adoption of alternatives which might be deemed necessary as the result of the NEPA review. However, as a minor consideration some systems of the plant will become slightly more radioactive as a result of operation during the review period. Continued operation will not limit the feasibility of changes to the cooling or radwaste systems or to any other system that might have a potential impact on the environment. Making modifications at the end of the review period may involve some increase in costs as compared with making the changes now. However such cost increments are insignificant compared to the costs resulting from suspension of Monticello operation during the NEPA review period.

There has been no indication to date that significant adverse environmental impacts are occurring by current operation of the circulating water system with the cooling towers in the helper mode. Continued operation will not foreclose

adding equipment (reversing tower fans and chemical water treatment) required for year-around-closed-cycle operation.

In April 1971 NSP submitted to AEC Change Request No. 2 for the Monticello operating license Technical Specifications. This change is to modify the gaseous radwaste system by the addition of holdup tanks and other related equipment to effect a substantial reduction in the stack activity release rate. Several discussions have been held with the DRL staff regarding this proposed change and just recently an amendment was submitted to DRL. Information contained in the amendment is primarily responsive to questions set forth in DRL's letter of June 3, but also included is certain updated design information. Taking into account design time, review time, and equipment delivery time, it is unlikely that these off-gas modifications can be implemented during the NEPA review period. However NSP's proposal to install this equipment after a considerable period of plant operation is substantial evidence that plant operation will not foreclose incorporation of necessary additions and modifications.

EFFECTS OF SUSPENDED OPERATION ON
NSP AND ITS CONSUMERS

General Information

Northern States Power Company (NSP) and its Wisconsin subsidiary own and operate an interconnected system of transmission lines in Minnesota, Wisconsin, North Dakota and South Dakota which function to transport electric power produced in various generating stations or received through interconnections with other power suppliers. NSP's system is part of an interstate high-voltage and extra-high-voltage (EHV) transmission system owned by members of the Upper Mississippi Valley Power Pool and other regional utilities. This interstate system, in turn, is interconnected with similar systems beyond the midwest area. The total transmission system makes possible the purchase and sale of electric power between

major power systems, including assistance to each other in times of emergency by delivering large blocks of power over this grid. By forming into planning and operating power pools and by being able to rely on the grid system, utilities can operate more efficiently and can better cope with unusual conditions thus greatly reducing the likelihood of experiencing power blackouts.

Availability of Replacement Power

For the purpose of evaluating the economic effect of suspending operation of the Monticello plant ^{it} ~~is~~ has been assumed that suspension would commence about November 1, 1971 and continue for a period of one year. If the Monticello plant were to be made unavailable, NSP generating capability, including all available purchases, will be reduced by 533 Mw (Monticello summer rating) to 3586 Mw which is about 100 Mw less than the anticipated load requirements without any provision for reserve capability. Within the Upper Mississippi Valley Power Pool, this reduction will cause the generating reserve to be reduced from the needed 12% to a totally inadequate 4%. With no surplus power available in contiguous areas which include other nuclear generating units such as Point Beach 1, and Dresden 3 (also subject to NEPA review), there would be a shortage of capability which would cause NSP to be unable to continuously supply the needs of its customers.

Effect on Public Interest

A deficiency of generating capability would require implementation of NSP's load reduction plan. According to this plan, large industrial customers would be required to reduce their electric load. Further an appeal would be made, by radio and television, to commercial and residential customers for voluntary load reduction. If further load relief is necessary residential customers would be interrupted for periods up to one hour. This interruption would be rotated around various areas to minimize the impact on any one area. During peak load periods, and depending on the availability of other generating equipment, the

deficiency could be large and result in a major portion of NSP's consumers suffering power interruptions.

In addition to the very real and adverse effect on NSP's ability to supply consumers there would be the substantial financial consequences of the loss of low-cost energy produced by the Monticello plant. The unavailability of power would require NSP to attempt to replace most of the Monticello energy from its older less efficient equipment. Of additional concern is that the replacement of Monticello energy requires about 1.8 million tons of coal which has not been purchased, much less stored for use. Neither supply nor transportation facilities could be made available at this time to provide the additional coal requirements or the alternative quantities of oil. This fuel shortage would contribute substantially to the amount of customer load which could not be supplied.

To the extent available, the burning of additional coal in NSP's older generating equipment in lieu of operating the Monticello plant would have a substantial impact on the environment. Using this additionally required fossil fuel would release about 80,000 tons of sulfur dioxide and 18,000 tons of particulate matter to the environment.

Another effect of the shutdown of Monticello, with direct influence on the capability of NSP to continuously supply its consumers, is the reduced ability to maintain other generating facilities. Throughout the year generating equipment must be taken out of service, for periods up to five weeks, to perform annual maintenance. Loss of the Monticello unit will substantially interfere with this maintenance program. Deterioration of the running condition of NSP's generating facilities would likely result in an increasing loss of generation on forced outage. During these maintenance periods in 1972, new air pollution equipment in several plants is scheduled to be installed to meet new air quality requirements. It would be ironic if the equipment could not be installed because

of suspended operation of Monticello which is a plant supplying needed power with a minimum environmental impact.

Cost of Shutdown

Power production simulation studies by NSP have been run to determine the incremental cost of power to replace that lost by the postulated shutdown of Monticello. The added expenses amount to about \$20,000,000 for the one-year period and show a monthly variation of from \$700,000 for May 1972 to a high of \$2,700,000 for March 1972 as set forth in Exhibit 9. These costs are based on the assumption that all energy requirements would be furnished by NSP generation to the extent possible. Beyond this energy purchases are assumed from outside sources.

There are other costs associated with having a \$110,000,000 nuclear generating plant and a \$25,000,000 fuel supply standing idle and nonproductive. If operations are suspended for the NEPA review period, there will be added cost due to contractual commitments for nuclear fuel and reprocessing under a "heat content" purchase agreement with General Electric. This penalty is estimated to be about \$1,000,000 for the one year period. Therefore NSP and its consumers would be required to suffer extra costs amounting to a total of \$21,000,000 for the one year suspension period.

CONCLUSION

Northern States Power Company believes the preceding information justifies continued operation of the Monticello plant during the NEPA review period. No significant adverse impacts on the environment will occur. Secondly, continued operation of plant will not foreclose adoption of alternatives that could result from the NEPA environmental review. Thirdly, NSP believes the above information clearly shows that NSP and its consumers will suffer substantial additional costs

if Monticello operations were to be suspended during the review period. It therefore can be concluded that the Monticello operating license should not be suspended, in whole or in part, pending completion of the NEPA environmental review.