January 24, 1996

Mr. Roger O. Anderson, Director Licensing and Management Issues Northern States Power Company 414 Nicollet Mall Minneapolis, Minnesota 55401

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2 -SUBJECT: ISSUANCE OF AMENDMENTS RE: RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (TAC NOS. M93383 AND M93384)

Dear Mr. Anderson:

The Commission has issued the enclosed Amendment No.122 to Facility Operating License No. DPR-42 and Amendment No. 115 to Facility Operating License No. DPR-60 for the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated July 17, 1995, as supplemented October 16, 1995, and November 28, 1995.

The amendments revise the Prairie Island Radiological Effluent TSs and other sections relating to radiological controls to conform to NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 1, and Generic Letter 89-01, "Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Programs."

A copy of our related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original Signed By:

Beth A. Wetzel, Project Manager Project Directorate III-1 Division of Reactor Projects - III/IV Office of Nuclear Reactor Regulation

9602050016 960124 PDR ADDCK 05000282 PDR

Docket Nos. 50-282 and 50-306

Enclosures:

- 1. Amendment No. 122 to DPR-42
- 2. Amendment No. $\overline{1}\overline{1}\overline{5}$ to DPR-60
- Safety Evaluation 3.

cc w/encl: See next page



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cc w/encl: See next page

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UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 24, 1996

Mr. Roger O. Anderson, Director Licensing and Management Issues Northern States Power Company 414 Nicollet Mall Minneapolis, Minnesota 55401

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2 -ISSUANCE OF AMENDMENTS RE: RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (TAC NOS. M93383 AND M93384)

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Beth A. Wetzel, Project Manager Project Directorate III-1 Division of Reactor Projects - III/IV Office of Nuclear Reactor Regulation

Docket Nos. 50-282 and 50-306

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- 2. Amendment No. 115 to DPR-60
- 3. Safety Evaluation

cc w/encl: See next page

Mr. Roger O. Anderson, Director Northern States Power Company

cc:

J. E. Silberg, Esquire Shaw, Pittman, Potts and Trowbridge 2300 N Street, N. W. Washington DC 20037

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U.S. Nuclear Regulatory Commission Resident Inspector's Office 1719 Wakonade Drive East Welch, Minnesota 55089-9642

Regional Administrator, Region III U.S. Nuclear Regulatory Commission 801 Warrenville Road Lisle, Illinois 60532-4351

Mr. Jeff Cole, Auditor/Treasurer Goodhue County Courthouse Box 408 Red Wing, Minnesota 55066-0408

Kris Sanda, Commissioner Department of Public Service 121 Seventh Place East Suite 200 St. Paul, Minnesota 55101-2145

Site Licensing Prairie Island Nuclear Generating Plant Northern States Power Company 1717 Wakonade Drive East Welch, Minnesota 55089 Prairie Island Nuclear Generating Plant

March 1995

DATED: January 24, 1996

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> AMENDMENT NO. 122 TO FACILITY OPERATING LICENSE NO. DPR-42-PRAIRIE ISLAND UNIT 1 AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NO. DPR-60-PRAIRIE ISLAND UNIT 2 DISTRIBUTION:

Docket File PUBLIC PDIII-1 Reading J. Roe E. Adensam (e) C. Jamerson B. Wetzel (2) OGC G. Hill (4) C. Grimes, 0-11F23 R. Clark S. Klementowicz R. Giardina ACRS W. Kropp, RIII SEDB

cc: Plant Service list

050008



WASHINGTON, D.C. 20555-0001

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-282

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 122 License No. DPR-42

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated July 17, 1995, as supplemented October 16, 1995, and November 28, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
- 2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-42 is hereby amended to read as follows:

9602050020 960124 PDR ADDCK 05000282 P PDR

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 122, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, with full implementation within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

both a. Wetel

Beth A. Wetzel, Project Manager Project Directorate III-1 Division of Reactor Projects - III/IV Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: January 24, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 122

FACILITY OPERATING LICENSE NO. DPR-42

DOCKET NO. 50-282

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

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Prairie Island Unit 1 Prairie Island Unit 2

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3.1-1 3.1-2 3.1-3	Unit 1 and Unit 2 Reactor Coolant System Heatup Limitations Unit 1 and Unit 2 Reactor Coolant System Cooldown Limitations DOSE EQUIVALENT I-131 Primary Coolant Specific Activity Limit Versus Percent of RATED THERMAL POWER with the Primary Coolant Specific Activity >1.0 uCi/gram DOSE EQUIVALENT I-131
3.8-1	Spent Fuel Pool Unrestricted Region Minimum Burnup Requirements
3.10-1	Required Shutdown Margin Vs Reactor Boron Concentration
4.4-1	Shield Building Design In-Leakage Rate
5.6-1 5.6-2	Spent Fuel Pool Burned/Fresh Checkerboard Cell Layout Spent Fuel Pool Checkerboard Region Minimum Burnup Requirements

TS.1-3

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 is that concentration of I-131 (uCi/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites".

E-AVERAGE DISINTEGRATION ENERGY

 \bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the sample) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

FIRE SUPPRESSION WATER SYSTEM

The FIRE SUPPRESSION WATER SYSTEM consists of: Water sources; pumps; and distribution piping with associated sectionalizing isolation valves. Such valves include yard hydrant valves, and the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe, or spray system riser.

LIMITING SAFETY SYSTEM SETTINGS

LIMITING SAFETY SYSTEM SETTINGS are settings, as specified in Section 2.3, for automatic protective devices related to those variables having significant safety functions.

Prairie Island Unit 1 Prairie Island Unit 2

TS.1-4

OPERABLE - OPERABILITY

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this paragraph.

The OPERABILITY of a system or component shall be considered to be established when: (1) it satisfies the Limiting Conditions for Operation in Specification 3.0, (2) it has been tested periodically in accordance with Specification 4.0 and has met its performance requirements, and (3) its condition is consistent with the two paragraphs above.

OPERATIONAL MODE - MODE

An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table TS.1.1.

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental characteristics of the core and related instrumentation. PHYSICS TESTS are conducted such that the core power is sufficiently reduced to allow for the perturbation due to the test and therefore avoid exceeding power distribution limits in Specification 3.10.B.

Low power PHYSICS TESTS are run at reactor powers less than 2% of rated power.

Prairie Island Unit 1 Prairie Island Unit 2

PROTECTION INSTRUMENTATION AND LOGIC

1. PROTECTION SYSTEM

The PROTECTION SYSTEM consists of both the reactor trip system and the engineered safety feature system. The PROTECTION SYSTEM encompasses all electrical and mechanical devices and circuitry (from sensors through the actuating devices) which are required to operate in order to produce the required protective function. Tests of protection systems will be considered acceptable when overlapped if run in parts.

2. PROTECTION SYSTEM CHANNEL

A PROTECTION SYSTEM CHANNEL is an arrangement of components and modules as required to generate a single protective action signal when required by a unit condition. The channel loses its identity where single action signals are combined.

3. LOGIC CHANNEL

A LOGIC CHANNEL is a group of relay contact matrices which operate in response to analog channel signals to generate a protective action signal.

QUADRANT POWER TILT RATIO

QUADRANT POWER TILT RATIO shall be the ratio of the maximum quadrant power indicated by an upper excore detector to the average reactor power indicated by the upper excore detectors or the ratio of the maximum quadrant power indicated by a lower excore detector to the average reactor power indicated by the lower excore detectors, whichever is greater. Power is proportional to excore detector current times its calibration factor.

RATED THERMAL POWER

RATED THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant of 1650 megawatts thermal (MWt).

REPORTABLE EVENT

A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 of 10 CFR Part 50.

Prairie Island Unit 1 Prairie Island Unit 2

SHIELD BUILDING INTEGRITY

SHIELD BUILDING INTEGRITY shall exist when:

- 1. Each door in each access opening is closed except when the access opening is being used for normal transit entry and exit, then at least one door shall be closed, and
- 2. The shield building equipment opening is closed.
- 3. The Shield Building Ventilation System is OPERABLE.

SHUTDOWN MARGIN

SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which:

1) the reactor is subcritical

or

2) the reactor would be subcritical from its present condition assuming all rod cluster control assemblies are fully inserted except for the rod cluster control assembly of highest reactivity worth which is assumed to be fully withdrawn.

SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the specified Surveillance Frequency so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels or other designated components in the associated function.

For example, the surveillance frequency for the automatic trip and interlock logic specifies that the functional testing of that system is monthly and that each train shall be tested at least every two months on a STAGGERED TEST BASIS. Per the definition above, for the automatic trip and interlock logic, the Surveillance Frequency interval is monthly and the number of trains (channels) is 2 (n=2). Therefore, STAGGERED TEST BASIS requires one train be tested each month such that after two Surveillance Frequency intervals (two months) both trains will have been tested.

STARTUP OPERATION

The process of heating up a reactor above 200°F, making it critical, and bringing it up to POWER OPERATION.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Prairie	Island	Unit	1
Prairie	Island	Unit	2

1. a. Pursuant to 10CFR20, paragraph 20.1601(c), in lieu of the requirements of 10CFR20.1601, each high radiation area, as defined in 10CFR20, in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., health physics technicians) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates less than or equal to 1000 mrem/hr, provided they are otherwise following plant radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- (1) A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- (2) A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- (3) An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the radiation protection manager.
- b. In addition to the requirements of Specification 6.5.B.1.a above, areas with radiation levels greater than or equal to 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Supervisor on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in the immediate work areas and the maximum allowable stay

times for individuals in those areas. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV or transmitting radiation monitoring device) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

- c. For individual high radiation areas with radiation levels of greater than 1000 mrem/hr, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that cannot be continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.
- 2. A program shall be implemented to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:
 - a. Provisions establishing preventive maintenance and periodic visual inspection requirements, and
 - b. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals

A program acceptable to the Commission was described in letters from L.O.Mayer, NSP, to Director of Nuclear Reactor Regulation, dated December 31, 1979 "Lessons Learned Implementation" and March 13, 1980, "1/1/80 Lessons Learned Implementation Additional Information".

- 3. A program shall be implemented which will ensure the capability to accurately determine the airborne iodine concentration in essential plant areas under accident conditions. This program shall include the following:
 - a. Training of personnel,
 - b. Procedures for monitoring, and
 - c. Provisions for maintenance of sampling and analysis equipment

A program acceptable to the Commission was described in letters from L.O.Mayer, NSP, to Director of Nuclear Reactor Regulation, dated December 31, 1979 "Lessons Learned Implementation" and March 13, 1980, "1/1/80 Lessons Learned Implementation Additional Information". 4. A program shall be implemented which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

a. Training of personnel,

b. Procedures for sampling and analysis,

- c. Provisions for maintenance of sampling and analysis equipment.
- C. Maintenance and Test

The following maintenance and test procedures will be developed to satisfy routine inspection, preventive maintenance programs, and operating license requirements.

- 1. Routine testing of Engineered Safeguards and equipment as required by the facility License and the Technical Specifications.
- 2. Routine testing of standby and redundant equipment.
- 3. Preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety.
- 4. Calibration and preventive maintenance of instrumentation that could affect the nuclear safety of the plant.
- 5. Special testing of equipment for proposed changes to operational procedures or proposed system design changes.
- D. Deleted
- E. Offsite Dose Calculation Manual (ODCM)

The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent. monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Monitoring, and Radioactive Effluent Reports required by Specification 6.7.C.1 and Specification 6.7.A.4.

Prairie Island Unit 1 Prairie Island Unit 2

TS.6.5-5

Changes to the ODCM:

- 1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - a. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s),
 - b. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose or setpoint calculations;
- 2. Shall become effective after approval by a member of plant management designated by the Plant Manager.
- 3. Shall be submitted to the NRC in the form of a complete legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed. The date (i.e., month and year) the change was implemented shall be indicated.
- F. Security

Procedures shall be developed to implement the requirements of the Security Plan and the Security Contingency Plan. These implementing procedures, with the exception of those non-safety related procedures which govern work activities exclusively applicable to or performed by security personnel, shall be reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager. Security procedures not reviewed by the Operations Committee shall be reviewed and approved by the Superintendent Security.

G. Temporary Changes to Procedures

Temporary changes to Operations Committee reviewed procedures described in A,B,C,D,E and F above, which do not change the intent of the original procedure may be made with the concurrence of two members of the unit management staff, at least one of whom holds a Senior Reactor Operator License. Such changes shall be documented, reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager within one month. Temporary changes to security procedures not reviewed by the Operations Committee shall be reviewed by two (2) individuals knowledgeable in the area affected by the procedure.

Prairie Island Unit 1 Prairie Island Unit 2

TS.6.5-6

H. Radioactive Effluent Controls Program

This program conforms to 10CFR50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable.

This program shall allocate releases equally to each unit. The liquid radwaste treatment system, waste gas treatment system, containment purge release vent, and spent fuel pool vent are shared by both units. Experience has also shown that contributions from both units are released from each auxiliary building vent. Therefore, all releases will be allocated equally in determining conformance to the design objectives of 10CFR50, Appendix I.

The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;
- Limitation on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to Appendix B to 10CFR20.1 - 20.601, Table II, Column 2;
- 3. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10CFR20.1302 and with the methodology and parameters in the ODCM;
- 4. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10CFR50, Appendix I;
- 5. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least monthly;
- 6. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of one month from the liquid effluent releases would exceed 0.12 mrem to the total body or 0.4 mrem to any organ; or from the gaseous effluent releases would exceed 0.8 mrad for beta air dose, or 0.6 mrem organ dose;

- 7. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary conforming to the dose associated with Appendix B to 10CFR20.1 20.601, Table II, Column 1;
- 8. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10CFR50, Appendix I;
- 9. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10CFR50, Appendix I; and
- 10. Limitation on the annual dose or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40CFR190.
- I. Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup system, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

- 1. The limits for concentration of oxygen in the waste gas holdup system and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria;
- A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than or equal to 78,000 curies of noble gases (considered as dose equivalent Xe-133); and
- 3. A surveillance program to ensure that the quantity of radioactivity contained in each of the following tanks shall be limited to 10 curies, excluding tritium and dissolved or entrained noble gases:

Condensate storage tanks Outside temporary tanks

4. The provisions of TS 4.0 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

6.7.A.4. Radioactive Effluent Report

The Radioactive Effluent Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant. The material provided shall be consistent with the objectives outlined in the ODCM and in conformance with 10CFR50.36a and 10CFR50, Appendix I, Section IV.B.1.

6.7.A.5. Annual Summaries of Meteorological Data

An annual summary of meteorological data shall be submitted for the previous calendar year in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability at the request of the Commission.

6.7.A.6. Core Operating Limits Report

- a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:
 - 1. Heat Flux Hot Channel Factor Limit (F_0) , Nuclear Enthalpy

Rise Hot Channel Factor Limit ($F\Delta_H$), PFDH, K(Z) and V(Z) (Specifications 3.10.B.1, 3.10.B.2 and 3.10.B.3)

- 2. Axial Flux Difference Limits and Target Band (Specifications 3.10.B.4 through 3.10.B.9)
- 3. Shutdown and Control Bank Insertion Limits (Specification 3.10.D)
- 4. Reactor Coolant System Flow Limit (Specification 3.10.J)
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

NSPNAD-8101-A, "Qualification of Reactor Physics Methods for Application to PI Units" (latest approved version)

NSPNAD-8102-A, "Prairie Island Nuclear Power Plant Reload Safety Evaluation Methods for Application to PI Units" (latest approved version)

WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology", July, 1985

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WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code", August, 1985

WCAP-10924-P-A, "Westinghouse Large-Break LOCA Best-Estimate Methodology", December, 1988

WCAP-10924-P-A, Volume 1, Addendum 4, "Westinghouse Large Break LOCA Best Estimate Methodology", August, 1990

XN-NF-77-57 (A), XN-NF-77-57, Supplement 1 (A), "Exxon Nuclear Power Distribution Control for Pressurized Water Reactors Phase II", May, 1981

WCAP-13677, "10 CFR 50.46 Evaluation Model Report: <u>W</u>-COBRA/TRAC 2-Loop Upper Plenum Injection Model Update to Support ZIRLO_{TM} Cladding Options", April 1993 (approved by NRC SE dated November 26, 1993).

NSPNAD-93003-A, "Transient Power Distribution Methodology", (latest approved version)

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be supplied upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

B. REPORTABLE EVENTS

The following actions shall be taken for REPORTABLE EVENTS:

- a. The Commission shall be notified by a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and
- b. Each REPORTABLE EVENT shall be reviewed by the Operations Committee and the results of this review shall be submitted to the Safety Audit Committee and the Vice President Nuclear Generation.

Prairie Island Unit 1 Prairie Island Unit 2 Amendment No. 92,93,109,122 Amendment No. 83,86,102,115

C. Environmental Reports

The reports listed below shall be submitted to the Administrator of the appropriate Regional NRC Office or his designate:

1. Annual Radiological Environmental Monitoring Report

The Annual Radiological Environmental Monitoring Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10CFR50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiation Environmental Monitoring Reports shall include summarized and tabulated results in the format of Regulatory Guide 4.8, December 1975 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: a summary description of the radiological environmental monitoring program; a map of all sampling locations keyed to a table giving distances and directions from one reactor; and the results of licensees participation in the Interlaboratory Comparison Program defined in the ODCM.

- 2. Deleted
- 3. Other Environmental Reports (non-radiological, non-aquatic)

Written reports for the following items shall be submitted to the appropriate NRC Regional Administrator:

a. Environmental events that indicate or could result in a significant environmental impact casually related to plant operation. The following are examples: excessive bird impaction; onsite plant or animal disease outbreaks; unusual mortality of any species protected by the Endangered Species Act of 1973; or increase in nuisance organisms or conditions. This report shall be submitted within 30 days of the event and shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition

Prairie Island Unit 1 Prairie Island Unit 2 Amendment No. \$\$,1\$\$,122 Amendment No. \$\$,9\$,115 of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

- b. Proposed changes, test or experiments which may result in a significant increase in any adverse environmental impact which was not previously reviewed or evaluated in the Final Environmental Statement or supplements thereto. This report shall include an evaluation of the environmental impact of the proposed activity and shall be submitted 30 days prior to implementing the proposed change, test or experiment.
- D. <u>Special Reports</u>

Unless otherwise indicated, special reports required by the Technical Specifications shall be submitted to the appropriate NRC Regional Administrator within the time period specified for each report.



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-306

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.115 License No. DPR-60

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated July 17, 1995, as supplemented October 16, 1995, and November 28, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted im compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
- 2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-60 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 115, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, with full implementation within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Beth a We

Beth A. Wetzel, Project Manager Project Directorate III-1 Division of Reactor Projects - III/IV Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: January 24, 1996

ATTACHMENT TO LICENSE AMENDMENT NO.115

FACILITY OPERATING LICENSE NO. DPR-60

DOCKET NO. 50-306

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

REMOVE	<u>INSERT</u>	
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TS SECTION

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DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 is that concentration of I-131 (uCi/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites".

E-AVERAGE DISINTEGRATION ENERGY

E shall be the average (weighted in proportion to the concentration of each radionuclide in the sample) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

FIRE SUPPRESSION WATER SYSTEM

The FIRE SUPPRESSION WATER SYSTEM consists of: Water sources; pumps; and distribution piping with associated sectionalizing isolation valves. Such valves include yard hydrant valves, and the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe, or spray system riser.

LIMITING SAFETY SYSTEM SETTINGS

LIMITING SAFETY SYSTEM SETTINGS are settings, as specified in Section 2.3, for automatic protective devices related to those variables having significant safety functions.

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OPERABLE - OPERABILITY

A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this paragraph.

The OPERABILITY of a system or component shall be considered to be established when: (1) it satisfies the Limiting Conditions for Operation in Specification 3.0, (2) it has been tested periodically in accordance with Specification 4.0 and has met its performance requirements, and (3) its condition is consistent with the two paragraphs above.

OPERATIONAL MODE - MODE

An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table TS.1.1.

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental characteristics of the core and related instrumentation. PHYSICS TESTS are conducted such that the core power is sufficiently reduced to allow for the perturbation due to the test and therefore avoid exceeding power distribution limits in Specification 3.10.B.

Low power PHYSICS TESTS are run at reactor powers less than 2% of rated power.

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PROTECTION INSTRUMENTATION AND LOGIC

- 1. PROTECTION SYSTEM
 - The PROTECTION SYSTEM consists of both the reactor trip system and the engineered safety feature system. The PROTECTION SYSTEM encompasses all electrical and mechanical devices and circuitry (from sensors through the actuating devices) which are required to operate in order to produce the required protective function. Tests of protection systems will be considered acceptable when overlapped if run in parts.

2. PROTECTION SYSTEM CHANNEL

A PROTECTION SYSTEM CHANNEL is an arrangement of components and modules as required to generate a single protective action signal when required by a unit condition. The channel loses its identity where single action signals are combined.

3. LOGIC CHANNEL

A LOGIC CHANNEL is a group of relay contact matrices which operate in response to analog channel signals to generate a protective action signal.

QUADRANT POWER TILT RATIO

QUADRANT POWER TILT RATIO shall be the ratio of the maximum quadrant power indicated by an upper excore detector to the average reactor power indicated by the upper excore detectors or the ratio of the maximum quadrant power indicated by a lower excore detector to the average reactor power indicated by the lower excore detectors, whichever is greater. Power is proportional to excore detector current times its calibration factor.

RATED THERMAL POWER

RATED THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant of 1650 megawatts thermal (MWt).

REPORTABLE EVENT

A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 of 10 CFR Part 50.

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SHIELD BUILDING INTEGRITY

SHIELD BUILDING INTEGRITY shall exist when:

- 1. Each door in each access opening is closed except when the access opening is being used for normal transit entry and exit, then at least one door shall be closed, and
- 2. The shield building equipment opening is closed.
- 3. The Shield Building Ventilation System is OPERABLE.

SHUTDOWN MARGIN

SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which:

1) the reactor is subcritical

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2) the reactor would be subcritical from its present condition assuming all rod cluster control assemblies are fully inserted except for the rod cluster control assembly of highest reactivity worth which is assumed to be fully withdrawn.

SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the specified Surveillance Frequency so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels or other designated components in the associated function.

For example, the surveillance frequency for the automatic trip and interlock logic specifies that the functional testing of that system is monthly and that each train shall be tested at least every two months on a STAGGERED TEST BASIS. Per the definition above, for the automatic trip and interlock logic, the Surveillance Frequency interval is monthly and the number of trains (channels) is 2 (n-2). Therefore, STAGGERED TEST BASIS requires one train be tested each month such that after two Surveillance Frequency intervals (two months) both trains will have been tested.

STARTUP OPERATION

The process of heating up a reactor above 200°F, making it critical, and bringing it up to POWER OPERATION.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

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1. a. Pursuant to 10CFR20, paragraph 20.1601(c), in lieu of the requirements of 10CFR20.1601, each high radiation area, as defined in 10CFR20, in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., health physics technicians) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates less than or equal to 1000 mrem/hr, provided they are otherwise following plant radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- (1) A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- (2) A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- (3) An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the radiation protection manager.
- b. In addition to the requirements of Specification 6.5.B.1.a above, areas with radiation levels greater than or equal to 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Supervisor on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in the immediate work areas and the maximum allowable stay

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times for individuals in those areas. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV or transmitting radiation monitoring device) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

- c. For individual high radiation areas with radiation levels of greater than 1000 mrem/hr, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that cannot be continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.
- 2. A program shall be implemented to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:
 - a. Provisions establishing preventive maintenance and periodic visual inspection requirements, and
 - b. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals

A program acceptable to the Commission was described in letters from L.O.Mayer, NSP, to Director of Nuclear Reactor Regulation, dated December 31, 1979 "Lessons Learned Implementation" and March 13, 1980, "1/1/80 Lessons Learned Implementation Additional Information".

3. A program shall be implemented which will ensure the capability to accurately determine the airborne iodine concentration in essential plant areas under accident conditions. This program shall include the following:

a. Training of personnel,

b. Procedures for monitoring, and

c. Provisions for maintenance of sampling and analysis equipment

A program acceptable to the Commission was described in letters from L.O.Mayer, NSP, to Director of Nuclear Reactor Regulation, dated December 31, 1979 "Lessons Learned Implementation" and March 13, 1980, "1/1/80 Lessons Learned Implementation Additional Information".

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- 4. A program shall be implemented which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:
 - a. Training of personnel,
 - b. Procedures for sampling and analysis,
 - c. Provisions for maintenance of sampling and analysis equipment.
- C. Maintenance and Test

The following maintenance and test procedures will be developed to satisfy routine inspection, preventive maintenance programs, and operating license requirements.

- 1. Routine testing of Engineered Safeguards and equipment as required by the facility License and the Technical Specifications.
- 2. Routine testing of standby and redundant equipment.
- 3. Preventive or corrective maintenance of plant equipment and systems that could have an effect on nuclear safety.
- 4. Calibration and preventive maintenance of instrumentation that could affect the nuclear safety of the plant.
- 5. Special testing of equipment for proposed changes to operational procedures or proposed system design changes.
- D. Deleted
- E. Offsite Dose Calculation Manual (ODCM)

The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent. monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Monitoring, and Radioactive Effluent Reports required by Specification 6.7.C.1 and Specification 6.7.A.4.

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Changes to the ODCM:

- 1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - a. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s),
 - b. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose or setpoint calculations;
- 2. Shall become effective after approval by a member of plant management designated by the Plant Manager.
- 3. Shall be submitted to the NRC in the form of a complete legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed. The date (i.e., month and year) the change was implemented shall be indicated.
- F. Security

Procedures shall be developed to implement the requirements of the Security Plan and the Security Contingency Plan. These implementing procedures, with the exception of those non-safety related procedures which govern work activities exclusively applicable to or performed by security personnel, shall be reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager. Security procedures not reviewed by the Operations Committee shall be reviewed and approved by the Superintendent Security.

G. Temporary Changes to Procedures

Temporary changes to Operations Committee reviewed procedures described in A,B,C,D,E and F above, which do not change the intent of the original procedure may be made with the concurrence of two members of the unit management staff, at least one of whom holds a Senior Reactor Operator License. Such changes shall be documented, reviewed by the Operations Committee and approved by a member of plant management designated by the Plant Manager within one month. Temporary changes to security procedures not reviewed by the Operations Committee shall be reviewed by two (2) individuals knowledgeable in the area affected by the procedure.

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H. Radioactive Effluent Controls Program

This program conforms to 10CFR50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable.

This program shall allocate releases equally to each unit. The liquid radwaste treatment system, waste gas treatment system, containment purge release vent, and spent fuel pool vent are shared by both units. Experience has also shown that contributions from both units are released from each auxiliary building vent. Therefore, all releases will be allocated equally in determining conformance to the design objectives of 10CFR50, Appendix I.

The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1. Limitations on the functional capability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM;
- 2. Limitation on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to Appendix B to 10CFR20.1 - 20.601, Table II, Column 2;
- 3. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10CFR20.1302 and with the methodology and parameters in the ODCM;
- 4. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10CFR50, Appendix I;
- 5. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least monthly;
- 6. Limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of one month from the liquid effluent releases would exceed 0.12 mrem to the total body or 0.4 mrem to any organ; or from the gaseous effluent releases would exceed 0.4 mrad for gamma air dose, 0.8 mrad for beta air dose, or 0.6 mrem organ dose;

- 7. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary conforming to the dose associated with Appendix B to 10CFR20.1 20.601, Table II, Column 1;
- 8. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10CFR50, Appendix I;
- 9. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10CFR50, Appendix I; and
- 10. Limitation on the annual dose or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40CFR190.
- I. Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup system, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

- 1. The limits for concentration of oxygen in the waste gas holdup system and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria;
- 2. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than or equal to 78,000 curies of noble gases (considered as dose equivalent Xe-133); and
- 3. A surveillance program to ensure that the quantity of radioactivity contained in each of the following tanks shall be limited to 10 curies, excluding tritium and dissolved or entrained noble gases:

Condensate storage tanks Outside temporary tanks

4. The provisions of TS 4.0 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

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TS.6.7-3

6.7.A.4. Radioactive Effluent Report

The Radioactive Effluent Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant. The material provided shall be consistent with the objectives outlined in the ODCM and in conformance with 10CFR50.36a and 10CFR50, Appendix I, Section IV.B.1.

6.7.A.5. Annual Summaries of Meteorological Data

An annual summary of meteorological data shall be submitted for the previous calendar year in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability at the request of the Commission.

6.7.A.6. Core Operating Limits Report

- a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:
 - 1. Heat Flux Hot Channel Factor Limit (F_Q) , Nuclear Enthalpy

Rise Hot Channel Factor Limit $(F\Delta_H)$, PFDH, K(Z) and V(Z) (Specifications 3.10.B.1, 3.10.B.2 and 3.10.B.3)

- 2. Axial Flux Difference Limits and Target Band (Specifications 3.10.B.4 through 3.10.B.9)
- 3. Shutdown and Control Bank Insertion Limits (Specification 3.10.D)
- 4. Reactor Coolant System Flow Limit (Specification 3.10.J)
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

NSPNAD-8101-A, "Qualification of Reactor Physics Methods for Application to PI Units" (latest approved version)

NSPNAD-8102-A, "Prairie Island Nuclear Power Plant Reload Safety Evaluation Methods for Application to PI Units" (latest approved version)

WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology", July, 1985

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WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model Using the NOTRUMP Code", August, 1985

WCAP-10924-P-A, "Westinghouse Large-Break LOCA Best-Estimate Methodology", December, 1988

WCAP-10924-P-A, Volume 1, Addendum 4, "Westinghouse Large Break LOCA Best Estimate Methodology", August, 1990

XN-NF-77-57 (A), XN-NF-77-57, Supplement 1 (A), "Exxon Nuclear Power Distribution Control for Pressurized Water Reactors Phase II", May, 1981

WCAP-13677, "10 CFR 50.46 Evaluation Model Report: <u>W</u>-COBRA/TRAC 2-Loop Upper Plenum Injection Model Update to Support ZIRLO_{IM} Cladding Options", April 1993 (approved by NRC SE dated November 26, 1993).

NSPNAD-93003-A, "Transient Power Distribution Methodology", (latest approved version)

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be supplied upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

B. <u>REPORTABLE EVENTS</u>

The following actions shall be taken for REPORTABLE EVENTS:

- a. The Commission shall be notified by a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and -
- b. Each REPORTABLE EVENT shall be reviewed by the Operations Committee and the results of this review shall be submitted to the Safety Audit Committee and the Vice President Nuclear Generation.

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C. <u>Environmental Reports</u>

The reports listed below shall be submitted to the Administrator of the appropriate Regional NRC Office or his designate:

1. Annual Radiological Environmental Monitoring Report

The Annual Radiological Environmental Monitoring Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10CFR50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiation Environmental Monitoring Reports shall include summarized and tabulated results in the format of Regulatory Guide 4.8, December 1975 of all radiological environmental samples taken during the report period. In the event that some results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

- The reports shall also include the following: a summary description of the radiological environmental monitoring program; a map of all sampling locations keyed to a table giving distances and directions from one reactor; and the results of licensees participation in the Interlaboratory Comparison Program defined in the ODCM.
- 2. Deleted
- 3. Other Environmental Reports (non-radiological, non-aquatic)

Written reports for the following items shall be submitted to the appropriate NRC Regional Administrator:

a. Environmental events that indicate or could result in a significant environmental impact casually related to plant operation. The following are examples: excessive bird impaction; onsite plant or animal disease outbreaks; unusual mortality of any species protected by the Endangered Species Act of 1973; or increase in nuisance organisms or conditions. This report shall be submitted within 30 days of the event and shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition

Prairie Island Unit 1 Prairie Island Unit 2 Amendment No. 93,103,122 Amendment No. 86,98,115 of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

- b. Proposed changes, test or experiments which may result in a significant increase in any adverse environmental impact which was not previously reviewed or evaluated in the Final Environmental Statement or supplements thereto. This report shall include an evaluation of the environmental impact of the proposed activity and shall be submitted 30 days prior to implementing the proposed change, test or experiment.
- D. <u>Special Reports</u>

Unless otherwise indicated, special reports required by the Technical Specifications shall be submitted to the appropriate NRC Regional Administrator within the time period specified for each report.

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Amendment No. 93,103,122 Amendment No. 86,98,115



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 122 AND 115 TO

FACILITY OPERATING LICENSE NOS. DPR-42 AND DPR-60

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-282 AND 50-306

1.0 INTRODUCTION

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PDR

By letter dated July 17, 1995, as supplemented October 16, 1995, and November 28, 1995, the Northern States Power Company (NSP or the licensee) requested amendments to the Technical Specifications (TSs) appended to Facility Operating License Nos. DPR-42 and DPR-60 for the Prairie Island Nuclear Generating Plant, Unit Nos. 1 and 2. The proposed amendments would revise the Prairie Island Radiological Effluent TSs and other sections relating to radiological controls to conform to NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Revision 1, and Generic Letter (GL) 89-01, "Implementation of Programmatic Controls for Radiological Effluent Technical Specifications in the Administrative Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Offsite Dose Calculation Manual or to the Process Control Programs." GL 89-01 suggests that licensees (1) implement programmatic controls for Radiological Effluent Technical Specifications (RETS) in the Administrative Controls section of TSs, and (2) relocate procedural details of RETS to the Offsite Dose Calculation Manual (ODCM) or to the Process Control Program (PCP).

By letter of October 16, 1995, NSP forwarded a copy of its revised ODCM to the NRC for use as a reference. This information did not change the licensee's amendment request nor the staff's initial proposed no significant hazards considerations determination. Therefore, renoticing was not warranted.

In proposed Specification 6.5.E.1.b and 6.5.H.3, the licensee had referred to 10 CFR 20.106. This section of Part 20 had automatically converted to 10 CFR 20.1302 when the new Part 20 became effective. The licensee changed the citation to refer to 10 CFR 20.1302 in its November 28, 1995, supplement. The use of the same reference, although by a different designation, did not change the TSs and thus did not affect the staff's no significant hazards consideration determination.

Specification 6.5.B.1.a(4), as submitted, could have been interpreted as permitting closed circuit TV cameras alone to provide exposure control in high as well as low level radiation areas. The licensee advised the staff that in high radiation areas, the intent was that closed circuit TV or transmitting radiation monitoring devices would not be used alone, but in conjunction with other controls to preclude overexposures. In the November 28, 1995, supplement, the licensee clarified this item by deleting the one sentence that had been proposed for 6.5.B.1.a(4), including the reference to this sub-item in 6.5.B.1.b, to conform with NUREG-1431. The presence or absence of this one sentence would not affect the staff's assessment of radiation controls in the staff's no significant hazards consideration determination.

In the July 17, 1995, submittal, the licensee stated in several places that it intended to continue to allocate the total effluent releases equally to each unit, which is acceptable. The NRC staff advised the licensee that the wording could be interpreted as limiting each unit to one-half the regulatory limit. In the November 28, 1995, supplement the licensee clarified this issue by adding the words "each unit" to TS 6.5.H, paragraphs 4, 8, and 9. This is a minor clarification and in no way affects the staff's initial no significant hazards consideration determination.

Proposed TS 6.7.C.1, Annual Radiological Environmental Monitoring Report, incorporated the wording in GL 89-01. The staff advised the licensee that since GL 89-01 was issued, the standard TSs had been developed. The requirements in 5.6.2 of NUREG-1431, Rev. 1, dated April 7, 1995, on this same subject contained additional requirements that were very similar to Specification 6.7.C.1, paragraphs (c) and (d) in the present Prairie Island TSs. The licensee had proposed to delete these two paragraphs and relocate them to the ODCM. In the November 28, 1995, supplement, the licensee stated that it would retain 6.7.C.1 (c) and (d) in the TSs. With this retention, there is no change to these paragraphs in the present TSs and no effect on the staff's no significant hazards consideration determination.

2.0 BACKGROUND

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to state TSs to be included as part of the license. The Commission's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36. That regulation requires that the TSs include items in five specific categories, including (1) safety limits, limiting safety system settings and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls.

On July 19, 1995, the Commission published revisions to 10 CFR 50.36 specifying what must be included in limiting conditions for operation in the TSs (60 FR 36953). The new Final Rule identified four criteria to be used in determining whether a particular matter is required to be included in the TSs, as follows: (1) Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operating restriction that is an initial condition of a design-basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design-basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety. As a result, existing TS requirements which fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TSs, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

3.0 EVALUATION

The staff has reviewed the licensee's proposed changes to the TSs and finds that the request to relocate the RETS is consistent with the guidance provided in GL 89-01 and with the standard TSs in NUREG-1431. The line-item improvements in GL 89-01 allow (1) the relocation of the existing procedural details of the current RETS to the plant's ODCM or PCP, as appropriate, and (2) the incorporation of programmatic controls for radioactive wastes in the administrative controls section of the TSs. The staff considers that any future changes to the relocated RETS will be adequately controlled by 10 CFR 50.59, and, therefore, the radiological effluents control program at a licensee facility does not need to be controlled by the plant TSs. Additionally, should the licensee determine that any future change to plant design involves any unreviewed safety question, because of either (1) an increase in the probability or consequences of accidents or malfunctions of equipment important to safety, (2) the creation of a possibility for an accident or malfunction of a type different from any evaluated previously, or (3) a reduction in the margin of safety, then NRC approval and a license amendment would be required before implementation of the change. The NRC inspection and enforcement programs also enable the staff to monitor facility changes and licensee adherence to its commitments in the updated final safety analyses report (UFSAR) and to take any remedial action that may be appropriate.

The specific changes to the TSs are addressed below:

- 1. The amendments revise the Table of Contents to reflect the deletion of TS Sections 3.9, 4.10, 4.11, 4.17, 5.5, Bases 3.9, 4.10, 4.11, 4.17 and associated tables and figures. The revisions also reflect the inclusion of new subsections. The revisions also correct the spelling of "security" in 6.5.F of the Table of Contents. These are administrative and editorial changes and are acceptable.
- 2. In Section 1.0, <u>Definitions</u>, the amendments delete the definitions of gaseous radwaste treatment system, members of the public, offsite dose calculation manual, process control program, purge-purging, site boundary,

solidification, unrestricted area, ventilation exhaust treatment system and venting. The definition of the offsite dose calculation manual has been relocated to Section 6.5. The other definitions have been relocated to the ODCM or PCP in accordance with the guidance in GL 89-01. The proposed changes are acceptable.

- 3. Section 3.9 on "Radioactive Effluents" is being deleted in its entirety. The contents of Section 3.9 will be relocated to the ODCM or PCP, as appropriate, with additional programmatic controls being added to the Administrative Controls Section of the TSs in Section 6.5. The requirements in this section do not meet any of the four criteria in 10 CFR 50.36 and can be removed and relocated to a licensee controlled document, in this case the ODCM or PCP. The change is also consistent with the new standard TSs.
- 4. Section 4.10 on "Radiation Environmental Monitoring Program" is being deleted in its entirety. The contents of Section 4.10 will be relocated to the OCDM or PCP as appropriate with additional programmatic controls added to Section 6.5. The latter requires that changes to the ODCM be submitted for NRC review, thus maintaining NRC input to radiation environmental monitoring activities. The proposed changes are acceptable.
- 5. Section 4.11 on "Radioactive Source Leakage Test" is being deleted in its entirety. The requirements in this section do not meet any of the four criteria in 10 CFR 50.36 and can be removed and relocated to a licensee controlled document, in this case the ODCM or PCP. The change is acceptable.
- 6. Section 4.17 on "Radioactive Effluents Surveillance" is being deleted in its entirety. The contents of this section will be relocated to the ODCM or PCP, as appropriate. Additional programmatic controls are being added to Section 6.5. The change is acceptable.
- 7. Section 5.5 on "Radioactive Waste Systems" is being deleted in its entirety. This section currently describes the design objectives and functions of the liquid, gaseous and solid radwaste processing systems and the process and effluent radiological monitoring system. The section does not specify any limits or requirements on plant operation or the radwaste processing system. The requirements on the latter are in the UFSAR or NRC regulations (e.g., 10 CFR Part 20). In accordance with the revised 10 CFR 50.36, the discussion of the systems in this section is material that does not have to be in the TSs and the proposed deletion is acceptable.
- 8. Section 6.5 of the TSs describes the requirements on "Plant Operating Procedures." This section is being expanded from four to eight pages to cover the new requirements. Section 6.5B applies to control of high radiation areas in the plant. This is being changed to incorporate the revised 10 CFR Part 20 section number references. Section 6.5D currently describes the process for making changes to the PCP. This program ensures compliance with 10 CFR Part 20, 10 CFR Part 61, and 10 CFR Part 71 which

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regulate the processing and packaging of solid radioactive waste. Since the PCP compliance is already mandated by existing regulations, this subsection is being deleted and relocated to plant procedures. The descriptive material in this section does not meet any of the four criterion in 10 CFR 50.36. The material can be removed and relocated to a licensee controlled document (e.g., UFSAR or plant procedures). Section 6.5E describes the process for changing the ODCM. This subsection is being revised to include the new programmatic controls associated with relocation of the RETS Limiting Conditions for Operation (LCOs) and Surveillance Requirements from the TSs to the ODCM. A new subsection "H" (i.e., 6.5H) is being added to describe the "Radiological Effluent Controls Program." The subsection describes limitations and monitoring requirements. The subsection notes that the program shall allocate releases equally to each unit. A new subsection "I" on "Explosive Gas and Storage Tank Radioactivity Monitoring Program," is being added. This subsection specifies limits, surveillance requirements, and controls on potentially explosive gas mixtures contained in the waste gas holdup system, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The revised requirements proposed by the licensee provide adequate control over the various monitoring programs and are acceptable.

- 9. Section 6.7 of the TSs specifies reporting requirements. Subsection 6.7.A.4 currently specifies what is to be included in the annual radioactive effluent reports. Most of the prescriptive material is being relocated to the ODCM. The revised wording specifies that the material in the calendar year report shall be consistent with the objectives outlined in the ODCM and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I, Section IV.B.1. The proposed changes are acceptable.
- 10. Subsections 6.7.C.1 and 2 specify the material to be included in the annual radiological environmental monitoring report and environmental special reports. In accordance with the guidelines in GL 89-01, the specific report requirements are relocated to the ODCM and subsection 6.7.C.2 is deleted. The proposed changes are acceptable.
- 11. The BASES for Sections 3.9, 4.10, 4.11, and 4.17 are being deleted in their entirety. Since the sections which these BASES support have been deleted, the BASES themselves are no longer relevant and should be deleted.
- 12. The changes in the November 28, 1995, supplement provided clarification or conformance to the new standard TSs and are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (60 FR 52933). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). The amendments also change recordkeeping, reporting, or administrative procedures or requirements. Accordingly, with respect to these items, the amendments must meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(C)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 <u>CONCLUSION</u>

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Date: January 24, 1996