LICENSE AMENDMENT REQUESTS DATED July 11, 1994
Fire Protection Technical Specification Changes

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(3) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Prairie Island Nuclear Generating Plant Physical Security Plan," with revisions submitted through November 30, 1987; "Prairie Island Nuclear Generating Plant Guard Training and Qualification Plan," with revisions submitted through February 26, 1986; and "Prairie Island Nuclear Generating Plant Safeguards Contingency Plan," with revisions submitted through August 20, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

(4) Fire Protection

~~The licensee may proceed with and is required to complete the modifications identified in Paragraphs 3.1.1 through 3.1.21 of the NRC's Fire Protection Safety Evaluation, dated September 6, 1979 for the facility according to the schedule in Table 3.1. If any modifications cannot be completed on schedule the licensee shall submit a report explaining the circumstances and propose, for staff approval, a revised schedule.~~

~~In addition, the licensee shall submit the additional information identified in Sections 3.1 and 3.2 of the related Safety Evaluation in accordance with the schedule contained therein. In the event these dates for submittal cannot be be met, the licensee shall submit a report, explaining the circumstances, together with a revised schedule.~~

~~The licensee is required to develop and implement the administrative controls identified in Section 6 of the related Safety Evaluation within four months from the date of this amendment.~~

Northern States Power Company shall implement and maintain in effect all provisions of the approved fire protection program as described and referenced in the Updated Safety Analysis Report for the Prairie Island Nuclear Generating Plant, Units 1 and 2, and as approved in Safety Evaluation Reports dated September 6, 1979, April 4, 1980, December 29, 1980 and (...date for this application approval to be inserted by the NRC...) subject to the following provision:

The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

D. This license is effective as of the date of issuance and shall expire at midnight August 9, 2013.

FOR THE ATOMIC ENERGY COMMISSION

/s/ Roger S Boyd

A Giambusso, Deputy Director
for Reactor Projects
Directorate of Licensing

Attachment:
Change No. 3 to
Appendices A and B

Date of Issuance:

April 5, 1974

Unit 1

(3) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Prairie Island Nuclear Generating Plant Physical Security Plan," with revisions submitted through November 30, 1987; "Prairie Island Nuclear Generating Plant Guard Training and Qualification Plan," with revisions submitted through February 26, 1986; and "Prairie Island Nuclear Generating Plant Safeguards Contingency Plan," with revisions submitted through August 20, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

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The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

D. This license is effective as of the date of issuance and shall expire at midnight October 29, 2014.

FOR THE ATOMIC ENERGY COMMISSION

/s/ A Giambusso

A Giambusso, Deputy Director
for Reactor Projects
Directorate of Licensing

Date of Issuance:

October 29, 1974

Unit 2

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TECHNICAL SPECIFICATIONS

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DEGREE OF INSTRUMENTATION REDUNDANCY

DEGREE OF INSTRUMENTATION REDUNDANCY is defined as the difference between the number of OPERABLE channels and the minimum number of channels which when tripped will cause an automatic shutdown.

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".

$\bar{E}$-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.~~

GASEOUS RADWASTE TREATMENT SYSTEM

The GASEOUS RADWASTE TREATMENT SYSTEM shall be any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

3.14 FIRE DETECTION AND PROTECTION SYSTEMS

Applicability

Applies to instrumentation and plant systems used for fire detection and protection of the nuclear safety-related structures, systems, and components of the plant.

Objective

To insure that the structures, systems, and components of the plant important to nuclear safety are protected from fire damage.

Specification

A. Fire Detection Instrumentation

1. The minimum fire detection instrumentation for each fire detection zone shown in Table 3.14-1 shall be OPERABLE whenever equipment in that fire detection zone is required to be OPERABLE (except as specified in 3.14.A.2). Fire detection instruments located within containment are not required to be OPERABLE during the performance of Type A containment leakage rate tests.

2. If specification 3.14.A.1 cannot be met:

a. Within one hour, establish a fire watch patrol to inspect the zone with the inoperable instruments at least once per hour. Fire zones located inside primary containment are exempt from this requirement when CONTAINMENT INTEGRITY is required.

b. Restore the inoperable instruments to operable status within 14 days or submit a special report to the Commission within 30 days outlining the cause of the malfunction and the plans for restoring the instruments to OPERABLE status.

B. Fire Suppression Water System

1. The system shall be OPERABLE (except as specified in 3.14.B.2 or 3.14.B.3 below) at all times with:

a. The following pumps, including automatic initiation logic, OPERABLE and capable of delivering at least 2000 gpm at a discharge pressure of 108 psig.

1. Diesel-driven fire pump
2. Motor-driven fire pump
3. Screen wash pump

3.14.B.1.b. An OPERABLE flow path capable of taking suction from the river and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant valves and the first valve ahead of each deluge valve, hose station, or sprinkler system required to be OPERABLE.

2. With one or two of the pumps required by Specification 3.14.B.1.a inoperable, restore the inoperable equipment to OPERABLE status within 7 days or provide a special report to the Commission within 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in the FIRE SUPPRESSION WATER SYSTEM.

3. With the FIRE SUPPRESSION WATER SYSTEM otherwise inoperable:

a. Establish a backup FIRE SUPPRESSION WATER SYSTEM within 24 hours, and

b. Provide a special report to the Commission within 30 days outlining the actions taken and the plans and schedule for restoring the inoperable system to OPERABLE status.

C. Spray and Sprinkler Systems

1. Whenever equipment protected by the following spray and sprinkler systems is required to be OPERABLE, the spray and sprinkler system shall be OPERABLE (except as specified in 3.14.C.2 below):

a. Auxiliary Feed Pump Room WP-10

b. Diesel Generator Areas PA-1

c. Unit No. 1 Electrical Penetration Area PA-3

d. Unit No. 1 Electrical Penetration Area PA-4

e. Unit No. 2 Electrical Penetration Area PA-6

f. Unit No. 2 Electrical Penetration Area PA-7

g. Screenhouse PA-9

2. If Specification 3.14.C.1 cannot be met, a continuous fire watch with backup fire suppression equipment shall be established within one hour. Restore inoperable spray and sprinkler systems to OPERABLE status within 14 days or submit a special report to the Commission within 30 days outlining the cause of inoperability and the plans for restoring the system to OPERABLE status.

3.14.D. Carbon Dioxide System

1. The CO_2 system protecting the relay and cable spreading room area shall be OPERABLE with a minimum level of 60% in the CO_2 storage tank (except as specified in 3.14.D.3 below).

2. During those periods when the relay and cable spreading room area is normally occupied, automatic initiation of the CO_2 system may be bypassed. During those periods when the area is normally unoccupied, the CO_2 system shall be capable of automatic initiation unless there are personnel actually in the area.

3. If specification 3.14.D.1 cannot be met, a continuous fire watch with backup fire suppression equipment shall be stationed in the relay and cable spreading room within one hour. Restore the system to OPERABLE status within 14 days or submit a special report to the Commission within 30 days outlining the cause of inoperability and the plans for restoring the system to OPERABLE status.

E. Fire Hose Stations

1. Whenever equipment protected by hose stations in the following areas is required to be OPERABLE, the hose station(s) protecting that area shall be OPERABLE (except as specified in 3.14.E.2 below):

a. Diesel Generator Rooms
b. Safety Related Switchgear Rooms
c. Safety Related Areas of Screenhouse
d. Auxiliary Building
e. Control Room
f. Relay & Cable Spreading Room
g. Battery Rooms
h. Auxiliary Feed Pump Room

2. If Specification 3.14.E.1 cannot be met, within one hour hoses supplied from OPERABLE hose stations shall be made available for routing to each area with an inoperable hose station.

Restore the inoperable hose station(s) to OPERABLE status within 14 days or submit a special report to the Commission within 30 days outlining the cause of the inoperability and the plans and schedule for restoring the stations to OPERABLE status.

3.14.F. Yard Hydrant Hose Houses

1. Whenever equipment in the following buildings is required to be OPERABLE, the yard hydrant hose houses in the main yard loop adjacent to each building shall be OPERABLE (except as specified in 3.14.F.2 below):

a. Unit No. 1 Reactor Building

b. Unit No. 2 Reactor Building

c. Turbine Building

d. Auxiliary Building

e. Screen House

2. If Specification 3.14.F.1 cannot be met, within one hour have sufficient additional lengths of 2-1/2 inch diameter hose located in adjacent OPERABLE yard hydrant hose house(s) to provide service to the unprotected area(s).

Restore the yard hydrant hose house(s) to OPERABLE status within 14 days or submit a a special report to the Commission within 30 days outlining the cause of the inoperability and the plans and schedule for restoring the houses to OPERABLE status.

G. Penetration Fire Barriers

1. All penetration fire barriers in fire area boundaries protecting equipment required to be OPERABLE shall be OPERABLE (except as specified in 3.14.G.2 below).

2. If Specification 3.14.G.1 cannot be met within one hour:

a) establish a continuous fire watch on at least one side of the affected penetration(s), or

b) verify the OPERABILITY of the fire detectors on at least one side of the inoperable barrier and establish an hourly fire watch.

Restore the inoperable penetration fire barriers to OPERABLE status within 7 days or submit a special report to the Commission within 30 days outlining the cause of the inoperability and the plans and schedule for restoring the barriers to OPERABLE status.

H. The provisions of specification 3.0.C are not applicable.

TABLE TS.3.14-1
SAFETY RELATED FIRE DETECTION INSTRUMENTS

ZONE NO.	LOCATION	TYPE OF DETECTOR	MINIMUM NO REQUIRED	TOTAL NO. INSTALLED
1	Battery Rooms	Ion	2	2
2	Air compressor & Auxiliary Fob Pump Area	Ion, Thermal	2 0	9 3
6	D-2 Diesel Generator Room	Ion, FlA	2 0	3 1
8	Auxiliary Building, Unit No. 1, Ground Floor	Ion, Smoke Thermal	10 0 0	46 1 2
10	Reactor Building, Unit No. 1, Ground Floor	Ion, Smoke	2 0	18 1
11	Bus 15 & 16 Switch-gear Rooms	Ion	2	6
12	Relay & Cable Spreading Room	Ion	8	17
14	Computer Room	Ion	2	4
19	Auxiliary Building, Unit No. 1, Mezzanine	Ion	5	31
20	Reactor Building, Unit No. 1, Mezzanine	Ion	4	15
21	Reactor Building, Unit No. 1, Annulus Mezzanine	Ion, FlA	2 0	12 4
26	Bus 110 & 120 Switch-gear Rooms	Ion	2	2
28	Auxiliary Building, Unit No. 1, Operating Floor	Ion	2	15
29	Reactor Building, Unit No. 1, Operating Floor	Ion	2	14

TABLE TS 3.14-1 (CONTINUED)

SAFETY RELATED FIRE DETECTION INSTRUMENTS

ZONE NO.	LOCATION	TYPE OF DETECTOR	MINIMUM NO REQUIRED	TOTAL NO. INSTALLED
30	Auxiliary Building, Unit No. 1, Fan Deck	Ion	7	28
31	Control Room Chiller Unit Room	Ion	2	6
32	Reactor Building, Unit No. 1, Fan Floor	Ion	2	4
33	Spent Fuel Handling Area	Ion	4	13
35	Battery Rooms	Ion	2	2
40	Auxiliary Building Unit No. 2, Ground Floor	Ion	5	14
42	Reactor Building, Unit 2, Ground Floor	Ion, Smoke	2 0	16 1
43	Bus 25 & 26 Switch-gear Rooms	Ion	2	6
46	Auxiliary Building, Unit No. 2, Mezzanine	Ion	5	22
47	Reactor Building, Unit No. 2, Annulus, Mezzanine	Ion Flame	2 0	12 4
50	Bus 210 & 220 Switch-gear Rooms	Ion	2	2
51	Auxiliary Building Unit No. 2, Operating Floor	Ion	1	10
52	Reactor Building, Unit No. 2, Operating Floor	Ion	3	14
53	Auxiliary Building, Unit No. 2, Fan Deck	Ion	3	23
54	Reactor Building, Unit No. 2, Fan Deck	Ion	2	4
56	Reactor Building, Unit No. 2, Mezzanine	Ion	4	15

TABLE TS.3.14-1 (pg 3 of 3)
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ZONE NO.	LOCATION	TYPE OF DETECTOR	MINIMUM NO REQUIRED	TOTAL NO. INSTALLED
57	Control Room	Ion	7	30
74	Screenhouse, Ground Floor	Ion	1	11
75	Screenhouse, Operating Floor	Ion	2	20
82	D-1 Diesel Generator Room	Ion,	2	3
		Flame	0	1

4.16 FIRE DETECTION AND PROTECTION SYSTEMS

Applicability

Applies to the periodic testing of instrumentation and plant systems used for fire detection and protection of the nuclear safety related structures, systems, and components.

Objective

To verify the operability of instrumentation and plant systems used for fire detection and protection of nuclear safety related structures, systems and components.

Specification

A. Fire Detection,Instrumentation

1. The minimum number of fire detectors required in each zone specified in Table TS.3.14-1 shall be functionally tested once every six months. The minimum number of fire detectors required in areas which are inaccessible during operation shall be functionally tested during each cold shutdown exceeding 24 hours unless performed during the previous six months, however, the outage need not be extended solely for completion of these tests.

2. The alarm circuit for the detectors required in each zone specified in Table TS.3.14-1 shall be tested every six months.

B. Fire Suppression Water System

1. The system shall be verified operable as follows:

a. Operability of the diesel-driven fire pump starting battery shall be demonstrated by:

1. Once each week verify electrolyte level and voltage is within specification.

2. Once every three months verify the specific gravity of each cell is within specifications.

3. Once every 18 months inspect the batteries, battery racks, and electrical connections for damage or abnormal deterioration.

4.16.B.1.b. The motor-driven fire pump shall be started every month and run for at least 15 minutes on recirculation flow.

c. The diesel-driven fire pump shall be started every month from ambient conditions and run for at least 20 minutes on recirculation flow.

d. The level in the diesel-driven fire pump fuel storage tank shall be checked every month and verified to contain at least 500 gallons of fuel.

e. Every three months verify that a sample of fuel from the diesel-driven fire pump fuel storage tank is within the acceptable limits specified in Table 1 of ASTM D975-68 when checked for viscosity, water and sediment.

f. Every 18 months subject the diesel-driven fire pump engine to an inspection in accordance with procedures prepared in conjunction with the manufacturer's recommendations for this class of standby service.

g. A simulated automatic actuation of each fire pump and the screen wash pump, including verification of pump capability, shall be conducted every 18 months.

h. The header system shall be flushed every 12 months.

i. System flow tests shall be performed every three years

j. Valves in flow paths supplying fire suppression water to safety related structures, systems and components shall be cycled every 12 months.

k. Each valve (manual, power operated or automatic) in the flow path for safety-related areas and areas posing a fire hazard to safety-related areas, shall be verified to be in its correct position every month and the method of securing the valve in its correct position shall be verified every month.

C. Spray and Sprinkler Systems

Each spray and sprinkler system specified in 3.14.C.1 shall be demonstrated operable by performing a nozzle inspection and system functional test, which includes simulated automatic actuation of the system, every 18 months.

D. Carbon Dioxide System

The relay and cable spreading room carbon dioxide system shall be demonstrated operable by the following actions:

1. Verify CO_2 storage tank level and pressure every week.

2. Verify that the system is operable by performing a system functional test which includes a simulated automatic actuation of the system every 18 months and a puff test every three years.

E. Fire Hose Stations

The fire hose stations specified in 3.14.E.1 shall be demonstrated operable as follows:

1. Each month is visual inspection shall be conducted to assure all equipment is available.

2. Every 18 months the hose shall be removed for inspection and re-racking and all gaskets in the couplings shall be inspected and replaced if necessary.

3. Every three years, partially open each hose station valve to verify valve operability and no blockage.

4. Every three years each hose shall be hydrostatically tested at a pressure at least 50 psig greater than the maximum pressure available at that hose station.

F. Yard Hydrant Hose Houses

The yard hydrant hose houses specified in 3.14.F.1 shall be demonstrated operable as follows:

1. Each month a visual inspection shall be conducted of the yard hydrant hose houses to assure all required equipment is available.

2. Every six months (in the spring and fall) visually inspect each yard fire hydrant and verify that the hydrant barrel is dry and that the hydrant is not damaged.

3. Every year conduct a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at any yard hydrant hose house and conduct an inspection of all gaskets in the couplings. All degraded gaskets shall be replaced.

G. Penetration Fire Barriers

Penetration fire barriers in fire area boundaries protecting safety related equipment shall be demonstrated operable as follows:

1. A visual inspection of fire barrier penetration fire barriers shall be conducted every 18 months.

2. Following repair or maintenance of a penetration fire barrier a visual inspection of the seal shall be conducted.

3. At least two licensed operators shall he present in the control room during a reactor startup, a scheduled reactor shutdown, and during recovery from a reactor trip. These operators are in addition to those required for the other reactor.

4. An individual qualified in radiation protection procedures shall be on site when fuel is in a reactor.

5. All refueling operations shall be directly supervised by a licensed Senior Reactor Operator or a Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.

~~6. A fire brigade of at least five members shall he maintained on site at all times.* The fire brigade shall not include the six members of the minimum shift crew for safe shutdown of the reactors.~~

6. ~~7~~. The General Superintendent Plant Operations shall be formerly licensed or hold a current license.

7. ~~8~~. At least one member of plant management holding a current Senior Reactor Operator license shall be assigned to the plant operations group on a long term basis (approximately two years). This individual shall not be assigned to a rotating shift.

D. Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for (1) the General Superintendent Radiation Protection who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and (2) the Shift Manager who shall have a bachelors degree or equivalent in a scientific or engineering discipline with specific training in plant design, and response and analysis of the plant for transients and accidents, and (3) the General Superintendent Plant Operations who shall meet the requirements of ANSI N18.1-1971, except that NRC license requirements are as specified in Specification 6.1.C.7. The training program shall be under the direction of a designated member of Northern States Power management.

~~*Fire Brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of Fire Brigade members provided immediate action is taken to restore the Fire Brigade to within the minimum requirements.~~

E. Deleted

~~E. A training program for the fire brigade shall be maintained under the direction of a designated member of Northern States Power management. This program shall meet the requirements of Section 27 of the NFPA Code - 1976 with the exception of training scheduling. Fire brigade training shall be scheduled as set forth in the training program.~~

F. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., senior reactor operators, reactor operators, health physicists, auxiliary operators, and key maintenance personnel. Procedures shall include the following provisions:

1. Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a nominal 40-hour week while the plant is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance or major plant modifications, on a temporary basis, the following guidelines shall be followed:

   a. An individual should not be permitted to work more than 16 hours straight excluding shift turnover time.

   b. Overtime should be limited for all nuclear plant staff personnel so that total work time does not exceed 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 84 hours in any seven day period, all excluding shift turnover time. Individuals should not be required to work more than 15 consecutive days without two consecutive days off.

   c. A break of at least eight hours including shift turnover time should be allowed between work periods.

   d. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

   e. Shift Emergency Coordinator (SEC) on-site rest time periods shall not be considered as hours worked when determining the total work time for which the above limitations apply.

f. Investigations of all Reportable Events and events requiring Special Reports to the Commission.

g. Drills on emergency procedures (including plant evacuation) and adequacy of communication with offsite support groups.

h. All procedures required by these Technical Specifications, including implementing procedures of the Emergency Plan, and the Security Plan (except as exempted in Section 6.5.F), shall be reviewed initially and periodically with a frequency commensurate with their safety significance but at an interval of not more than two years. Maintenance work requests and their associated procedures shall be reviewed per the requirements of Section 6.2.C.

i. Special reviews and investigations, as requested by the Safety Audit Committee.

j. Review of investigative reports of unplanned releases of radioactive material to the environs.

k. All changes to the Process Control Program (PCP) and the Offsite Dose Calculation Manual (ODCM).

l. The review of safety evaluations, when safety evaluations are required by 10 CFR Part 50, Section 50.59, for procedures or procedure changes to verify that such actions do not constitute an unreviewed safety question.

m. Fire Protection Program and implementing procedures and the submittal of recommended changes to the Safety Audit Commmittee.

5. Authority

The OC shall be advisory to the Plant Manager. In the event of a disagreement between the recommendations of the OC and the Plant Manager, the course determined by the Plant Manager to be the more conservative will be followed. A written summary of the disagreement will be sent to the Vice President Nuclear Generation and the Chairman of the SAC for review.

6. Records

Minutes shall be recorded for all meetings of the OC and shall identify all documentary material reviewed. The minutes shall be distributed to each member of the OC, the Chairman and each member of the Safety Audit Committee, the Vice President Nuclear Generation and others designated by the OC Chairman.

7. Procedures

A written charter for the OC shall be prepared that contains:

a. Responsibility and authority of the group

3.14 FIRE DETECTION AND PROTECTION SYSTEMS

Bases

Ionization, photoelectric, and thermal type fire detectors are located throughout safety related structures. These detectors sense the products of combustion during the very early stages of a fire or the heat emitted by a fire. The detectors in each area initiate an alarm in the control room. The specifications require a minimum number of detectors to be OPERABLE in each area. If this number is not OPERABLE, except for fire detectors located in primary containment, a patrolling fire watch is established in the affected area.

If an area is found to have an inoperable detector, the alarm for the affected zone may be bypassed while the detector is being repaired. Primary containment detectors are unique since (1) they are inaccessible during normal operation, and (2) no significant fire hazard exists inside containment during normal operation. Inoperable fire detectors located inside containment will be repaired during the first scheduled outage following discovery. Safety related fire detection instruments are listed in Table TS.3.14.1.

The FIRE SUPPRESSION WATER SYSTEM is supplied from the Mississippi River by two horizontal centrifugal fire pumps rated at 2000 gpm at 120 psig. One pump is motor driven and the other pump is diesel driven. A third pump also rated at 2000 gpm at 120 psig, is assigned to the screen wash system, and serves as a backup to the FIRE SUPPRESSION WATER SYSTEM. The fire header is maintained between 108 and 113 psig by a jockey fire pump. If the water demand is such that the jockey pump cannot maintain the header pressure, the screen wash pump will start (if not running) and the screen wash to fire header bypass valve will open at 102 psig. The bypass line is orificed to restrict flow to 450 gpm. On further demand, the motor driven fire pump will automatically start at 95 psig. If further demand of water is called for and the header pressure drops to 90 psig, the diesel driven fire pump will start. Pumps are designed to pump 2000 gpm and maintain a minimum of 65 psig in the fire header, measured at the highest point in the system. The screen wash pump may be directly aligned to the fire header by manual action from the control room. Any one fire pump, or the screen wash pump, can be used to supply all fire fighting water requirements. In the event that a pump is inoperable, up to seven days are allowed to restore the pump to operability or a report must be submitted to the Commission explaining the circumstances. If all pumps are inoperable, or if the fire suppression water system is incapable of supplying water to a safety related area, a backup FIRE SUPPRESSION WATER SYSTEM must be established within 24 hours and the Commission must be informed.

The cooling water system, also supplied by the Mississippi River, provides additional redundancy to the FIRE SUPPRESSION WATER SYSTEM. Crossover water supplies from the cooling water system to the fire protection system are provided for the safety related areas.

3/4.14 FIRE DETECTION AND PROTECTION SYSTEMS

Bases continued

Water deluge or wet pipe sprinkler systems are provided in safety related areas where a significant fire hazard exists, except for the relay and cable spreading room. Due to the nature of the equipment in the relay and cable spreading area, a carbon dioxide system is provided. Whenever a deluge or sprinkler system is inoperable, a continuous fire watch with backup fire suppression equipment available is stationed in the area until OPERABILITY is restored. Whenever the relay and cable spreading room carbon dioxide systems becomes inoperable, up to 14 days are allowed to complete maintenance. If the system cannot be restored to OPERABLE status within this time period, a report outlining the situation is submitted to the Commission. Whenever the carbon dioxide system is inoperable, a continuous fire watch with backup fire suppression equipment is stationed in the room. Since the relay and cable spreading area is occupied during normal working hours, the automatic initiation feature of the CO_2 system is bypassed during this period and whenever entry is made during other times. The system is initiated manually in the event fire is detected when the room is occupied.

In addition to deluge and sprinkler systems, hydrant hose houses are located in the yard and hose stations are located throughout the plant. These hose stations provided primary and backup protection for safety related systems and components. Normally all yard hydrant hose houses and hose stations are OPERABLE when a reactor is above COLD SHUTDOWN. If a hose house or station protecting safety related equipment becomes inoperable, additional hose must be available for routing to the unprotected area. This hose may be supplied from an OPERABLE hydrant hose house, hose station, or brigade locker.

Piping and electrical penetrations are provided with seals where required by the fire severity. If a seal is made or found to be inoperable for any reason, the penetration area is continuously attended or monitored hourly if fire detectors on at least one side of the inoperable barrier are OPERABLE until an effective fire seal is restored. Seals have been qualified for the maximum fire severity present on either side of the barrier.

4.16 FIRE DETECTION AND PROTECTION SYSTEMS

Bases

The minimum number of fire detectors required to be OPERABLE in each fire zone are functionally tested following the manufacturer's recommendations each six months, except for those located inside the primary containment which are tested during each COLD SHUTDOWN exceeding 24 hours unless performed during the previous six months. These tests are performed by the plant staff. Other fire detectors will be tested at an interval which experience has shown to be necessary to assure reliable operation. Every six months an alarm circuit check is performed. This check can be performed in conjunction with detector functional tests. All circuitry is also provided with automatic supervision for opens and ground faults.

Fire pumps are tested each month to verify OPERABILITY. Test starting of the screen wash pump is not required since it is normally in service. Each fire pump is manually started and operated for at least 15 or 20 minutes with pump flow directed through the recirculation test line. Every 18 months the OPERABILITY of the automatic actuation logic for the fire pumps and the screen wash pump is verified and the performance of each pump is verified to meet system requirements. The specified flush and valve lineup check provide assurance that the piping system is capable of supplying fire suppression water to all safety related areas. When one of the pumps is inoperable the operable pumps are run daily to verify OPERABILITY until all pumps are once again available.

FIRE SUPPRESSION WATER SYSTEM flow tests will be done at least every three years to verify hydraulic performance. The testing will be performed using Section II, Chapter 5 of the Fire Protection Handbook, 14th Edition, as a procedural guide. The test is generally performed in conjunction with insurance inspections.

Surveillance specified for each spray and sprinkler system is intended to assure that the systems will function as designed when they are needed. Functional tests are conducted at 18 month intervals on those systems provided with test facilities.

The testing specified for the relay and cable spreading room CO_2 system provides assurance that the CO_2 inventory is adequate to extinguish a fire in this area and that the system is capable of automatic actuation.

Hose stations and yard hydrant hose houses are inspected monthly to verify that all required equipment is in place. Gaskets in hose couplings are inspected periodically and the hose is pressure tested. Pressure testing of outdoor hose is conducted more frequently than indoor hose because of the less favorable storage conditions. OPERABILITY of hose station isolation valves is verified every three years by partially opening each valve to verify flow. All of these tests provide a high degree of assurance that each hose station will perform satisfactorily after periods of standby service.

4.16 FIRE DETECTION AND PROTECTION SYSTEMS

Bases continued

Plant fire barrier walls are provided with seals for pipes and cables where necessary. Where such seals are installed, they must be maintained intact to perform their function. Visual inspection of each installed seal is required every 18 months and after seal repair. A visual inspection following repair of a seal in the secondary containment boundary is sufficient to assure that seal leakage will be within acceptable limits.

LICENSE AMENDMENT REQUESTS DATED July 11, 1994
Fire Protection Technical Specification Changes

EXHIBIT C

Operating License and Technical Specification
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TS.6.1-3
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(3) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Prairie Island Nuclear Generating Plant Physical Security Plan," with revisions submitted through November 30, 1987; "Prairie Island Nuclear Generating Plant Guard Training and Qualification Plan," with revisions submitted through February 26, 1986; and "Prairie Island Nuclear Generating Plant Safeguards Contingency Plan," with revisions submitted through August 20, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

(4) Fire Protection

Northern States Power Company shall implement and maintain in effect all provisions of the approved fire protection program as described and referenced in the Updated Safety Analysis Report for the Prairie Island Nuclear Generating Plant, Units 1 and 2, and as approved in Safety Evaluation Reports dated September 6, 1979, April 4, 1980, December 29, 1980 and (...date for this application approval to be inserted by the NRC...) subject to the following provision:

> The licensee may make changes to the approved Fire Protection Program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

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TECHNICAL SPECIFICATIONS

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DEGREE OF INSTRUMENTATION REDUNDANCY

DEGREE OF INSTRUMENTATION REDUNDANCY is defined as the difference between the number of OPERABLE channels and the minimum number of channels which when tripped will cause an automatic shutdown.

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".

$\bar{E}$-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.

GASEOUS RADWASTE TREATMENT SYSTEM

The GASEOUS RADWASTE TREATMENT SYSTEM shall be any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

3. At least two licensed operators shall he present in the control room during a reactor startup, a scheduled reactor shutdown, and during recovery from a reactor trip. These operators are in addition to those required for the other reactor.

4. An individual qualified in radiation protection procedures shall be on site when fuel is in a reactor.

5. All refueling operations shall be directly supervised by a licensed Senior Reactor Operator or a Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.

6. The General Superintendent Plant Operations shall be formerly licensed or hold a current license.

7. At least one member of plant management holding a current Senior Reactor Operator license shall be assigned to the plant operations group on a long term basis (approximately two years). This individual shall not be assigned to a rotating shift.

D. Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for (1) the General Superintendent Radiation Protection who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and (2) the Shift Manager who shall have a bachelors degree or equivalent in a scientific or engineering discipline with specific training in plant design, and response and analysis of the plant for transients and accidents, and (3) the General Superintendent Plant Operations who shall meet the requirements of ANSI N18.1-1971, except that NRC license requirements are as specified in Specification 6.1.C.7. The training program shall be under the direction of a designated member of Northern States Power management.

E. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., senior reactor operators, reactor operators, health physicists, auxiliary operators, and key maintenance personnel. Procedures shall include the following provisions:

1. Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a nominal 40-hour week while the plant is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance or major plant modifications, on a temporary basis, the following guidelines shall be followed:

   a. An individual should not be permitted to work more than 16 hours straight excluding shift turnover time.

   b. Overtime should be limited for all nuclear plant staff personnel so that total work time does not exceed 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 84 hours in any seven day period, all excluding shift turnover time. Individuals should not be required to work more than 15 consecutive days without two consecutive days off.

   c. A break of at least eight hours including shift turnover time should be allowed between work periods.

   d. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

   e. Shift Emergency Coordinator (SEC) on-site rest time periods shall not be considered as hours worked when determining the total work time for which the above limitations apply.

f. Investigations of all Reportable Events and events requiring Special Reports to the Commission.

g. Drills on emergency procedures (including plant evacuation) and adequacy of communication with offsite support groups.

n. All procedures required by these Technical Specifications, including implementing procedures of the Emergency Plan, and the Security Plan (except as exempted in Section 6.5.F), shall be reviewed initially and periodically with a frequency commensurate with their safety significance but at an interval of not more than two years. Maintenance work requests and their associated procedures shall be reviewed per the requirements of Section 6.2.C.

i. Special reviews and investigations, as requested by the Safety Audit Committee.

j. Review of investigative reports of unplanned releases of radioactive material to the environs.

k. All changes to the Process Control Program (PCP) and the Offsite Dose Calculation Manual (ODCM).

l. The review of safety evaluations, when safety evaluations are required by 10 CFR Part 50, Section 50.59, for procedures or procedure changes to verify that such actions do not constitute an unreviewed safety question.

m. Fire Protection Program and implementing procedures and the submittal of recommended changes to the Safety Audit Commmittee.

5. Authority

The OC shall be advisory to the Plant Manager. In the event of a disagreement between the recommendations of the OC and the Plant Manager, the course determined by the Plant Manager to be the more conservative will be followed. A written summary of the disagreement will be sent to the Vice President Nuclear Generation and the Chairman of the SAC for review.

6. Records

Minutes shall be recorded for all meetings of the OC and shall identify all documentary material reviewed. The minutes shall be distributed to each member of the OC, the Chairman and each member of the Safety Audit Committee, the Vice President Nuclear Generation and others designated by the OC Chairman.

7. Procedures

A written charter for the OC shall be prepared that contains:

a. Responsibility and authority of the group