



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

PUBLIC SERVICE COMPANY OF COLORADO

DOCKET NO. 50-267

FORT ST. VRAIN NUCLEAR GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 21  
License No. DPR-34

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The applications for amendment by Public Service Company of Colorado (the licensee) dated December 11, 1978, September 8, 1978, April 2, 1979, November 16, 1977 and October 5, 1978, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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 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.D(2) of facility Operating License No. DPR-34 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 21, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*W. P. Gammill*

William P. Gammill, Assistant Director for  
Standardization and Advanced Reactors  
Division of Project Management  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the  
Technical Specifications

Date of Issuance: June 6, 1979

ATTACHMENT

AMENDMENT NO. 21 TO  
FACILITY OPERATING LICENSE DPR-34

Docket No. 50-267

Remove existing pages 4.2-3, 4.2-4, 4.2-20, 4.2-21, 4.3-6, 4.3-11, 4.5-1, 4.5-2, 4.10-1, 4.10-2, 4.10-3, 5.1-3, 5.2-7, 5.2-8, 5.2-17, 5.2-18, 5.5-1, 5.5-2 and 5.5-2(a) with the attached revised pages bearing the same numbers. The changed areas are reflected by marginal lines.

Also, add pages 4.2-22, 4.10-2(a), 5.2-21 and 5.10-3 which contain new material.

These accumulators contain sufficient water to permit circulator coast-down without circulator damage if both the normal and the backup bearing water supplies should fail. The minor water makeup requirements for the normal bearing water system is provided by the bearing water makeup pumps.

Specification LCO 4.2.3 - Turbine Water Removal Pump, Limiting Conditions for Operation

There shall be one operable turbine water removal pump during power operation.

Basis for Specification LCO 4.2.3

One turbine water removal pump has sufficient capacity to remove the water from two circulator water turbines. This is adequate for a safe shutdown cooling.

Specification LCO 4.2.4 - Service Water Pumps, Limiting Conditions for Operation

At least two service water pumps and the associated pump pit shall be operable during power operation.

Basis for Specification LCO 4.2.4

The availability of the service water system ensures the capability of supplying essential components with cooling water, as described in FSAR Sections 1.4, 10.3, and 14.4.

Specification LCO 4.2.5 - Circulating Water Makeup System, Limiting Conditions for Operation

At least two circulating water makeup pumps connectible to the essential bus shall be operable during power operation.

Basis for Specification LCO 4.2.5

Circulating water system makeup to the service water and fire protection system provides adequate makeup water to safely shut the reactor down from

any normal operating condition. For further explanation see FSAR Sections 1.4, 10.3 and 14.4.

Specification LCO 4.2.6 - Firewater Pumps, Limiting Conditions for Operation

The engine-driven fire pump, motor driven fire pump, and associated pump pits shall be operable and there shall be at least 325 gallons of fuel in storage during power operation.

Basis for Specification LCO 4.2.6

Either of the fire pumps operating in conjunction with either firewater booster pump provides adequate capacity to operate a circulator water turbine and supply emergency cooling water for safe shutdown cooling. With the 325 gallons of fuel in storage, the engine driven fire pump can operate at rated conditions for 24 hours which is adequate time to have more fuel delivered to the site. For further explanation see Final Safety Analysis Report, Sections 1.4, 10.3, and 14.4.

Specification LCO 4.2.7 - PCRV Pressurization Limiting Conditions for Operation

The PCRV shall not be pressurized to more than 100 psia unless:

- a) The PCRV safety valve installation is operable, and there is less than 5 psig between the rupture disc and relief valve, and both inlet block valves are locked open.
- \*b) All primary and secondary penetration closures and hold down plates are in place and operable, per Specification LCO 4.2.9.
- \*c) The interspaces between the primary and secondary penetration closures are maintained at a pressure greater than primary system pressure with purified helium gas.

\*During the initial low power physics testing ( $\leq 0.1\%$  of rated thermal power) with the PCRV pressurized and when helium circulators C and D are in the pre-nuclear Pelton wheel configuration, exceptions to provisions b) and c) of this LCO will be the installation of the secondary closures and pressurization of the primary secondary closure interspace of C and D helium circulator penetrations.

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Specification LCO 4.2.16 - Diesel-Driven Pumps for IACM, Limiting Conditions  
for Operation

DELETE THIS SPECIFICATION IN ITS ENTIRETY

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Specification LCO 4.2.17 - Diesel-Driven Generator for ACM, Limiting Conditions for Operation

The reactor shall not be operated at power unless the ACM diesel-generator is operable, including the following:

1. One fuel oil transfer pump from the fuel oil storage tanks to the diesel fuel oil day tank is operable.
2. The associated switchgear and motor control center are operable.
3. There are at least 10,000 gallons of fuel total in storage.

The diesel-generator set may be inoperable for up to 7 consecutive days per month or a total of 21 days in a three month period for performance of maintenance, with the reactor at power.

Basis for Specification LCO 4.2.17

The ACM diesel-generator provides power independently of the plant electrical distribution network to various valves, lighting, and pieces of equipment. That equipment provides an alternate means of maintaining PCRV cooling during the Loss of Forced Circulation situation described in the Final Safety Analysis Report, Section 14.10.

The 10,000 gallons of fuel provides for one week operation of the generator with full ACM load, which is adequate time for obtaining additional fuel from off site sources.

Specification LCO 4.2.18 - Primary Coolant Depressurization Limiting Condition for Operation

The reactor shall not be operated at power unless a flow path for depressurization of the primary system exists that includes the HTFA, Helium Purification Cooler, Helium Purification Dryer, Low Temperature Gas-to-Gas Exchanger, LTA, and associated valves and piping to the reactor building exhaust ducting.

Basis for Specification LCO 4.2.18

In the event that permanent loss of forced circulation occurs, it is necessary to depressurize the primary coolant system. Start of depressurization following onset of loss of circulation is initiated as a function of prior power levels, 2 hours from full power operation, and is completed in approximately seven hours. Depressurization is completed by venting the purified gas to the atmosphere.

4.3-6

Specification LCO 4.3.9 - High Pressure Helium Supply System

DELETE THIS SPECIFICATION IN ITS ENTIRETY

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TABLE 4.3.10-1 (Continued)CLASS I HYDRAULIC SNUBBERS (Continued)Boiler Feed Snubbers

BFS-54	BFS-398	BFS-435	BFS-526	BFS-563	BFS-763
BFS-138	BFS-400	BFS-437	BFS-528	BFS-564	BFS-764
BFS-139	BFS-402	BFS-451	BFS-529	BFS-566	BFS-796
BFS-142	BFS-412	BFS-477	BFS-530	BFS-572	BFS-820
BFS-149	BFS-416	BFS-479	BFS-532	BFS-573	BFS-823
BFS-152	BFS-420	BFS-498	BFS-534	BFS-577	BFS-824
BFS-153	BFS-421	BFS-500	BFS-536	BFS-614	BFS-843
BFS-297	BFS-422	BFS-501	BFS-537	BFS-641	BFS-844
BFS-352	BFS-425	BFS-516	BFS-553(2)	BFS-679	
BFS-397	BFS-434	BFS-523	BFS-556	BFS-711	

Boiler Feed Snubbers - Emergency

BFS-14E	BFS-57E	BFS-167E	BFS-229E	BFS-298E	BFS-430E
BFS-15E	BFS-74E	BFS-181E	BFS-243E	BFS-398E	BFS-431E
BFS-16E	BFS-76E	BFS-197E	BFS-244E	BFS-399E	BFS-432E
BFS-26E	BFS-77E	BFS-203E	BFS-245E	BFS-405E	BFS-442E
BFS-29E	BFS-89E	BFS-204E	BFS-257E	BFS-414E	BFS-444E
BFS-30E	BFS-122E	BFS-210E	BFS-260E	BFS-417E	
BFS-31	BFS-141E	BFS-216E	BFS-263E	BFS-419E	
BFS-47E	BFS-142E	BFS-218E	BFS-264E	BFS-421E	
BFS-53E	BFS-143E	BFS-219E	BFS-268E	BFS-422E	
BFS-56E	BFS-158E	BFS-228E	BFS-269E	BFS-423E	

Hydraulic Oil Snubbers

HOS-1	HOS-14	HOS-29	HOS-46	HOS-61	HOS-76
HOS-2	HOS-15	HOS-30	HOS-48	HOS-63	HOS-77
HOS-3	HOS-16	HOS-31	HOS-49	HOS-64	HOS-78
HOS-4A	HOS-17	HOS-33	HOS-50	HOS-65	HOS-79
HOS-4B	HOS-18	HOS-34	HOS-51	HOS-66	HOS-80
HOS-5	HOS-19	HOS-35	HOS-52	HOS-67	HOS-81
HOS-6	HOS-20	HOS-36	HOS-53	HOS-68	HOS-82
HOS-7	HOS-21	HOS-37	HOS-54	HOS-69	HOS-83
HOS-8	HOS-22	HOS-38	HOS-55	HOS-70	HOS-84
HOS-9	HOS-23	HOS-39	HOS-56	HOS-71	HOS-85
HOS-10	HOS-24	HOS-40	HOS-57	HOS-72	HOS-86
HOS-11	HOS-25	HOS-41	HOS-58	HOS-73	HOS-87
HOS-12	HOS-27	HOS-42	HOS-59	HOS-74	HOS-88
HOS-13	HOS-28	HOS-45	HOS-60	HOS-75	

#### 4.5 CONFINEMENT SYSTEM - LIMITING CONDITIONS FOR OPERATION

##### Applicability

Applies to the minimum operable equipment of the reactor building (confinement), and the ventilation system.

##### Objective

To assure the operability of the confinement systems.

##### Specification LCO 4.5.1 - Reactor Building, Limiting Conditions for Operation

The plant shall not be operated at power; reactor vessel internal maintenance shall not be performed with irradiated fuel in the PCRV; or irradiated fuel handling shall not be performed within the reactor building unless:

- a) Reactor Building Integrity is maintained as follows:
  1. Personnel access to the building is controlled.
  2. The reactor building pressure is sub-atmospheric.
  3. The reactor building louvers are closed and the "pressure set point" is at 3 inches of water or less, except that reactor building louver groups may be opened one at a time quarterly for surveillance testing while the reactor is at power provided that the prerequisites of SR 5.5.2 are adhered to.
  4. When the truck doors to the truck bay are open, the reactor floor hatch, the deck hatch and all personnel doors in the truck bay are closed.
  5. When the reactor floor hatch and/or the deck hatch are open, the truck doors and external personnel doors in the truck bay are closed.
- b) Two of the three reactor building exhaust fans are operable.

Basis for Specification LCO 4.5.1

The integrity of the reactor building and operation of the ventilating system in combination limit the off-site doses under normal and abnormal conditions. In the unlikely event of a major release of activity from the PCRV, the combination of the reactor building and ventilation system would act to keep off-site doses well below 10 CFR 100 limits (see FSAR Section 14.10.3.4).

The pressure in the reactor building is held slightly below atmospheric pressure. Exfiltration would occur only above a wind velocity of about 30 mph. Wind conditions within the range of 0 to 25 mph prevail at the site about 98% of the time. The mechanical turbulence from wind speeds of 25 mph or higher would result in a dilution better than during lesser wind speed conditions for any nuclides exfiltrated from the reactor building. (FSAR Section 6.1.4.2)

The purpose of the pressure relief device is to maintain the integrity of the reactor building by relieving the pressure inside the building when it equals or exceeds 3 inches of water. In the unlikely event of the occurrence of a rapid increase of pressure inside the building of or exceeding 3 inches of water, the louvers would open, relieving the pressure, and then be automatically closed at approximately atmospheric pressure (or they can be manually closed), restoring the integrity of the reactor building (see FSAR 6.1.3.4) and maintaining the potential doses from the occurrence to as low as practicable.

The building ventilation system maintains the reactor building pressure slightly subatmospheric and reduces the amount of radioactivity released to the environment, during normal operation or accident conditions.

Specification LCO 4.10.1 - Room Isolation Dampers, Three Room Control Complex, Limiting Condition for Operation

The HVAC Room Isolation Dampers of the control room, auxiliary electric room and the 480 volt switchgear room, shall be operable during reactor power operation. If the dampers become inoperable and cannot be made operable within 72 hours, the reactor shall be shut down in an orderly manner.

Basis for Specification LCO 4.10.1

The HVAC room isolation dampers for the control room, auxiliary electric room and the 480 volt switchgear room, provide the required area isolation for maintaining an effective concentration of Halon after actuation of the Halon fire suppression system.

Specification LCO 4.10.2 - Halon Fire Suppression System, Three Room Control Complex, Limiting Condition for Operation

The Halon Fire Suppression system for the control room, auxiliary electric room, and the 480 volt switchgear room shall be operable during reactor power operation. If the Halon system becomes inoperable and cannot be made operable within 72 hours the reactor shall be shut down in an orderly manner.

Basis for Specification LCO 4.10.2

The Halon system provides fire suppression capability for the control room, auxiliary electric room, and the 480 volt switchgear room. Halon is a non-toxic, halogenated chemical fire suppressant. The Halon system is a total flooding extinguishing system divided into three sections. One section supplies the 480 volt switchgear room, the second section supplies the control room, and the third the auxiliary electric room. Total flooding of these areas will extinguish an active fire without requiring abandonment of the area.

The auxiliary electric room Halon System Section is automatically initiated by the simultaneous actuation of a detector in zone #2 and #3 of Table 4.10-3; the 480 volt room Halon System Section is automatically initiated by the simultaneous actuation of a detector in fire detection zone #5 and #6 of Table 4.10-3.

The Halon System Section for the 480 volt switchgear room may be manually initiated by a switch located just outside the door of the room. The Halon System for the auxiliary electric room may be manually initiated by a switch located just outside of the room. The Halon System Section of the control room is manually initiated by a switch located in the control room. In the event that electrical power is not available to initiate Halon System operation, each Halon storage bottle is provided with a manually operated release mechanism which will release the bottle contents when operated.

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Specification LCO 4.10.3 - Smoke Detectors and Alarms for Three Room Control Complex and Congested Cable Areas, Limiting Condition for Operation

The reactor shall not be operated at power unless the minimum number of smoke detectors for each of the zones listed in Table 4.10-3 are operable. If the minimum number of detectors of each zone are not operable, the following actions shall be taken:

An individual shall be designated to inspect the area or areas with inoperable detectors once per hour.

The inoperable detectors shall be made operable within thirty (30) days or the reactor shall be shut down in an orderly manner.

Basis for Specification LCO 4.10.3

The smoke detection and alarm system provides detection and alarm capability for the control room, auxiliary electric room, the 480 volt switch gear room, the congested cable areas located at the "G" and "J" column rows and selected reactor building HVAC return air ducts in various areas which are not normally manned.

In addition the system will automatically initiate operation of the Halon fire suppression system in the auxiliary electric room or the 480 volt switch-gear room upon actuation of a detector in both of the zones in each room.

The system alerts the operator to the possibility of a fire in the congested cable areas and to the necessity of investigation of conditions in these areas.

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Specification LCO 4.10.4 - Fire Barrier Penetration Seals, Limiting Condition for Operation

All fire barrier penetration seals shall remain intact. If a fire barrier penetration seal is disturbed, a continuous fire watch shall be posted on either side of the disturbed seal.

Basis for Specification LCO 4.10.4

There are a number of fire barrier penetration seals installed between vital plant areas where cables penetrate walls which act as fire stops. In order to prevent the spread of a fire from one vital area to another, cable penetrations have been sealed with various fire retardant materials. If the material of a fire barrier must be disturbed for maintenance, establishing a fire watch on either side of the barrier assures early notification of a potential fire hazard.

Specification LCO 4.10.5 - Fixed Water Spray Systems for the Auxiliary Electric Room, 480 Volt Switchgear Room, and Congested Cable Areas

The fixed water spray systems providing supplementary fire protection in the 480 volt switchgear room, auxiliary electrical equipment room, and congested cable areas of the reactor building side of the "J" wall and turbine building side of the "G" wall shall be operable during reactor power operation. If the spray systems become inoperable and cannot be made operable within 168 hours, the reactor shall be shut down in an orderly manner.

Basis for Specification LCO 4.10.5

The fixed water spray systems provide backup fire suppression in the congested cable areas. In the 480 volt switchgear room and the auxiliary electric room, the systems are a backup to the installed Halon system. If the fixed water spray systems were inoperable, the smoke detectors and alarm system of LCO 4.10.3 would be available for detection and alarm of a fire. In all areas where it is installed the fixed water spray system is a backup to normal fire fighting techniques.

above, and calibrated once a year. Operable reserve shutdown hoppers shall have an actuating bottle pressure  $\geq$  1500 psig.

- e) The reserve shutdown hopper pressure switches shall be calibrated at the same interval that they are removed from the reactor for maintenance.

Basis for Specification SR 5.1.2

The reliability of the reserve shutdown system to perform its function will be maintained by a control system pressure test and actual off-line rupture tests conducted in the hot service facility or other suitable facility. The control system pressure test demonstrates the ability to pressurize the hoppers and indicates the operability of the control system components. A successful test will increase the hopper pressure about 10 psi above reactor pressure. This differential is well below the minimum 115 psi differential required to burst the disc.

The off-line tests consist of actual disc ruptures and poison drops. These will be used to determine the reliability of the differential burst pressure of the disc, and the tendency of the poison material to hang up or deteriorate in the hoppers over extended periods of time.

This test information will be used to verify the capability to shut down the reactor in an emergency situation. The reserve shutdown system hoppers operate in two subsystems. The first consists of the seven hoppers in refueling regions 1, 3, 5, 7, 22, 28 and 34; the second subsystem is comprised of the remaining thirty hoppers in the remaining refueling regions. Safe control of the reactor by the reserve shutdown system can be accomplished with one of the seven hoppers inoperative, and one of the remaining 30 hoppers inoperative. A differential pressure of from 585 to 315 psi is available from the helium supply bottle with a pressure  $\geq$  1500 psig.

a. Tensile specimens are not included, since the liner is not a load carrying member but only a ductile membrane.

b. No thermal control specimens have been provided, since there is no appreciable temperature cycling of the liner.

The liner materials will normally be kept at or below 150°F during all plant operation.

Tests performed on this liner material (see FSAR Section 5.7.2.2) have indicated that no observable changes in material characteristics developed during an exposure to a fluence equivalent to the first five years of power operation. Further, these tests demonstrated no significant damage after a fluence equivalent to 30 years of power operation. The testing program prescribed for the Fort St. Vrain liner is in compliance with the ASME Boiler and Pressure Vessel C. Section III N-110.

The interval for specimen removal and testing subsequent to the fifth refueling cycle may be adjusted based on the analysis of prior results.

Specification SR 5.2.6 - Plateout Probe Surveillance

One plateout probe shall be removed for evaluation coincident with the first, third, and fifth refueling, and at intervals not to exceed five refueling cycles thereafter. If, during the second or fourth refueling cycle, or any refueling cycle following the fifth refueling, the primary coolant noble gas activity (gamma + beta) should increase by 25% over the average activity of the previous three months at the same reactor power level and the primary coolant activity is greater than 25% of design, the plateout probe shall be removed at the end of that refueling cycle. The probes shall be analyzed for  $^{90}\text{Sr}$  inventory in the reactor circuit. The probes removed shall also be analyzed for  $^{131}\text{I}$ .

Basis for Specification SR 5.2.6

The plateout probes are located in penetrations extending into steam generator shrouds and then into the gas stream of each coolant loop. One sample is accumulated by continuously bypassing a small portion of the core outlet coolant stream through diffusion tubes and sorption beds located in the probe body. Another sample can be accumulated by continuously bypassing a portion of the circulator outlet coolant stream through the probe. The core outlet sample can be used to determine the concentrations of fission products in the coolant stream entering the steam generator; the circulator outlet sample provides information about the amount of cleanup in each pass around the circuit.

The probes shall be analyzed for  $^{90}\text{Sr}$  and the results shall be used to establish the total  $^{90}\text{Sr}$  inventory in the reactor circuit to determine compliance with LCO 4.2.8. Results of probe analyses shall be compared with the calculated estimates of  $^{90}\text{Sr}$  which were made between probe removals. The analysis for  $^{131}\text{I}$  shall be made to determine the degree of conservatism of the assumptions made regarding the circulating and plated out iodine in the primary coolant circuit.

The interval for probe removal and analysis subsequent to the fifth refueling cycle may be adjusted based upon the analysis of prior results.

Specification SR 5.2.7 - Water Turbine Drive Surveillance

Components of the helium circulator water turbine drive system shall be tested as follows:

- a) One circulator and the associated water supply valving in each loop will be functionally tested by operation on water turbine drive using feedwater, condensate, and boosted condensate (supplied to the firewater booster pumps at fire pump discharge pressure), annually.

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Unlike most designs of emergency systems of conventional nuclear power plants, the components of the Safe Shutdown System of the Fort St. Vrain plant are utilized and operated during normal operation of the plant. This includes the helium circulators.

The performance of the helium circulators is continuously monitored during operation, i.e., compressor differential pressure, steam turbine steam flows, bearing water flows, buffer helium flows, and shaft vibration.

Examination at the time of the first turbine generator overhaul, and at 10-year intervals thereafter, is sufficient to monitor the condition of the helium circulator. The first turbine generator 'tear-down' or overhaul usually occurs after one year running to check the total assembly. Additional overhauls occur at 4 to 5-year intervals, for the life of the plant, to check components.

The helium compressor and steam turbine blading should experience minimal wear in its running environment, and, with this length of service before inspection, will have undergone sufficient stress cycling to accurately indicate service life.

Specification SR 5.2.19 - IACM Diesel-Driven Pumps Surveillance

DELETE SPECIFICATION SR 5.2.19 IN ITS ENTIRETY

Specification SR 5.2.20 - ACM Diesel Driven Generator Surveillance Requirement

- a) The diesel driven ACM generator shall be checked weekly by starting, and obtaining design speed and voltage.
- b) The generator shall be tested monthly under load for a minimum of two hours. The load under this condition shall be at least 100% of design ACM equipment full load.

Basis for Specification SR 5.2.20

A weekly check of the Alternate Cooling Method generator to demonstrate its capability to start and a monthly test of the generator under load provides adequate assurance that the Alternate Cooling Method generator will be available to supply electrical power under the highly degraded, loss of forced circulation situation.

Specification SR 5.2.21 - Hand Valve and Transfer Switch, Surveillance Requirements

Those pneumatically and electrically operated valves and electrical transfer switches that must be manually positioned to implement the ACM shall be tested twice annually at an interval between tests to be not less than four (4) months, nor greater than eight (8) months.

Basis for Specification SR 5.2.21

In the event that the ACM is to be implemented, it is necessary to position pneumatically and electrically operated valves manually and to reposition electrical transfer switches. The test frequency and interval specified will assure operability in the event such operation is required.

## 5.5 CONFINEMENT SYSTEM - SURVEILLANCE REQUIREMENTS

### Applicability

Applies to the surveillance of the reactor building (confinement) and the reactor building ventilation system.

### Objective

To ensure that the structure and components of the reactor building and ventilation systems are capable of minimizing the release of radioactivity to the atmosphere during potential abnormal conditions.

### Specification SR 5.5.1 - Reactor Building, Surveillance Requirements

The instrumentation which monitors the reactor building sub-atmospheric pressure will be functionally tested once every month and calibrated once a year.

### Basis for Specification SR 5.5.1

The reactor building atmosphere is normally maintained slightly below atmospheric pressure by the ventilation system (see FSAR Section 6.1.3.2). This requirement minimizes the amount and consequences of airborne activity released from the plant under most conditions (see FSAR Section 14.12.8). The leak rate of the building itself is not a significant parameter as is shown in FSAR Section 6.1.4.2.

### Specification SR 5.5.2 - Reactor Building Pressure Relief Device, Surveillance

The reactor building overpressure relief system differential pressure switches shall be functionally tested on a monthly basis and calibrated annually.

The louver groups shall be individually exercised quarterly.

Quarterly louver testing may be performed while the reactor is in operation only if the following prerequisites are adhered to:

1. Reactor shall be under normal steady state operating conditions.
2. Primary coolant pressure is within the normal envelope for existing conditions.
3. Reactor building ventilation system is operating per Technical Specifications.
4. No radioactive gas waste releases are in progress, nor is fuel handling being performed.
5. No airborne activity above background as indicated by the building activity monitors.
6. Area radiation monitors and local alarms are operable per Technical Specifications.
7. No surveillance testing is being performed on the reactor ventilation system or the radiation monitoring systems.
8. Only one segment (group of louvers) of the louver system shall be tested at any given time.
9. Communication shall exist between personnel performing the tests and the control room operators.
10. Capability shall exist to manually shut the louver panels.
11. Testing of the louver system shall not exceed a total duration of six (6) hours in any one quarter.
12. Non-compliance with any of the above conditions will require testing to be discontinued and the louver system will be returned to normal.

The reactor building relief (louver) system shall be exercised annually.

5.5-2(a)

Basis for Specification SR 5.5.2

The reactor building pressure relief device is designed to protect the building in the event that pressure in the reactor building exceeds the turbine building pressure by 3 inches of water. The device consists of louvers installed in a number of individual modules operated by mechanical linkages to pneumatic actuators (see FSAR Section 6.1.3.4). The specified test frequency shall ensure the operability of the reactor building relief system.

Specification SR 5.5.3 - Reactor Building Exhaust Filters, Surveillance

The exhaust filters in the reactor building ventilation system shall be tested as follows:

- a) Samples from the charcoal filters shall be laboratory tested after each 4400 hours of operation of the unit, or following painting, fire, or chemical\* release in any ventilation zone communicating with the unit. The results of laboratory carbon sample analysis from the unit shall show  $\geq$  90% radioactive methyl iodide removed when tested in accordance with ANSI N510-1975 ( $130^{\circ}\text{C}$ , 95% R.H.).
- b) A halogenated hydrocarbon test shall be performed once per calendar year or after each replacement of a charcoal adsorber bank or after structural maintenance on the filter housing. Halogenated hydrocarbon removal by the charcoal filters shall be  $\geq$  99%, when conducted at normal flow conditions in accordance with the applicable portions of ANSI N510-1975.

\*Defined as any material which could reasonably be expected to interfere with the charcoal to adsorb methyl iodide.

Specification LCO 4.2.19 - Firewater Booster Pumps, Limiting Conditions  
for Operation

There shall be one operable firewater booster pump during power operation.

Basis for Specification LCO 4.2.19

One firewater booster pump has sufficient capacity to supply the water for any one of the four helium circulator water turbines. This is adequate for safe shutdown cooling.

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TABLE 4.10-3SMOKE DETECTORS AND ALARMS

ZONE	NUMBER OF DETECTORS	MINIMUM NUMBER OPERABLE
1) Control Room	6	4
2) Auxiliary Electric Room	3	2
3) Auxiliary Electric Room	3	2
4) Auxiliary Electric Room Return Air Duct	1	0*
5) 480 Volt Switchgear Room	3	2
6) 480 Volt Switchgear Room	3	2
7) Reactor Building "J" Wall Elevation 4756' to 4791'	4	2
8) Reactor Building "J" Wall Elevation 4791' to 4829'	4	2
9) Reactor Building "J" Wall Elevation 4829' to 4849'	2	1
10) Reactor Building "J" Wall Elevation 4849' to 4881'	2	1
11) Turbine Building "G" Wall Elevation 4791' to 4811'	2	1
12) Turbine Building "G" Wall Elevation 4811' to 4829'	2	1
13) Reactor Building HVAC Return Air Duct at Elevation 4932'	1	1
14) Reactor Building HVAC Return Air Ducts	4	2
15) Reactor Building HVAC Return Air Duct	6	4

\*To be returned to service as soon as practicable after loss of function.

Specification SR 5.2.23 - Firewater Booster Pump Surveillance

Each firewater booster pump shall be tested annually by providing motive power to one water turbine drive in conjunction with the performance of SR 5.2.7. In addition each pump shall be functionally tested quarterly. The associated instruments and controls shall functionally be tested quarterly and calibrated annually.

Basis for Specification SR 5.2.23

During accident conditions described in Final Safety Analysis Report, Section 14.4.2.1, one of the firewater booster pumps and one firewater pump are required to provide adequate core cooling. The specified testing interval is sufficient to ensure proper operation of the pump and associated controls.

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Specification & 5.10.6 - Fixed Water Spray System, Surveillance Requirement

The manually operated valves actuating the fixed water spray system providing supplementary fire protection in the 480 volt switchgear room, auxiliary electric room, and congested cable areas shall be opened annually. The flow path from the manual isolation valves to and including the spray nozzles shall be verified to be open annually.

Basis for Specification SR 5.10.6

Annual opening of the manually operated valves and verification of available flow path is sufficient to demonstrate capability to operate if required.