Proposed Fire Protection Amendment to Technical Specifications

Narrative:

Pursuant to Boston Edison's commitment to provide Technical Specification Amendments on Sections 3/4.12, we have submitted the following:

Section	Title	Submittal Date
3/4.12A	Fire Detection Instrumentation	December 28, 1983
3/4.12B	Fire Water Supply System	November 16, 1983
3/4.12C	Spray and/or Sprinkler System	November 16, 1983
3/4.12D	Fire Hose Stations	November 16, 1983
3/4.12E	Gaseous Suppression System	October 13, 1983
3/4.12F	Fire Barrier System	September 12, 1983
3/4.12G	Alternate Shutdown Panels	July 11, 1983

The purpose of the above submittals was to provide updated Technical Specifications which would reflect changes to the plant made to PNPS in accordance with fire protection requirements. The preparation and review of the proposal segments suggested refinements, which we have incorporated into this submittal. The refinements are identified by a parallel line with an adjacent (2) ; the changes which were transmitted in prior submittals are identified by a parallel line. For reviewing convenience, Attachment A contains the Fire Protection section, while Attachment B contains other sections which are affected by the relocation of Alternate Shutdown Panels into a separate section.

Proposed Change (Refinements)

The following describe changes from the past submittals and are contained in Attachment A:

- The Table of Contents, page ii is changed to reflect new titles and pagination under the rubrick of Fire Protection.

- Action c of Section 3.12A is added, which states:

  > For inoperable fire detectors controlling fire suppression systems, see the respective fire suppression system section, i.e. Section 3.12C for water suppression systems or 3.12E for gaseous suppression systems.

  This is added to ensure that the appropriate LCO is followed for fire detectors which are part of a suppression system rather than of the detection system.

- Section 4.12A has been changed to read "...in accordance with the applicable NFPA 72A or 72D codes...". This change is made to clarify that Table 3.12-1 contains instruments reflecting either NFPA 72A or 72D; this is a reminder that the particular instrument being surveilled should be tested according to the code appropriate to it.

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P PDR

- Action b.3 of Section 3.12B is deleted. This change is made because 3.12.B.b addresses reporting which would result from a situation that is less than the minimum discussed in Action 3.12.B.a. Therefore 3.12.B.b.3 is redundant and unnecessary.

- The "or" associated with Actions a and b of Section 3.12.c are removed. Instead, 3.12.C.a states "...except as specified in 3.12.C.b and 3.12.c.c." This change is made for clarity, and for consistency with other PNPS technical specification wording.

- Action d of Section 3.12C is added, which states:

  > Restore the system to OPERABLE status within 14 days or prepare and submit a report to the Commission within the next 30 days outlining the action taken, the cause of inoperability and the plans for restoring the system to OPERABLE status.

  This section currently exists in Technical Specifications as Action b. It was inadvertently left out when the November 16, 1983 submittal was made.

- Action c of 3.12C has "...an equivalent water supply" simplified to "water".

- The EXCEPTION notes associated with Sections 3.12C and 3.12F currently allow an hourly fire watch patrol in place of a continuous fire watch patrol when the subject fire protection equipment is located in a designated "HIGH RADIATION AREA". This EXCEPTION will be expanded to include areas designated as "AIRBORNE RADIOACTIVITY AREA".

  This change is proposed to aid in Boston Edison's effort to minimize personnel radiation exposure consistent with the safe operation of Pilgrim.

- Table 3.12-2, associated with Section 3.12D, Fire Hose Stations, was reviewed and the following 19 stations were deleted:

  Reactor Aux Bay

  RA-43-23 - Water Treatment Area, El 23 ft.

  Radwaste & Control Area

  RC-73-01 - Monitor Tank Pump Area El (-) 1 ft.
  RC-68-01 - Radwaste Area North Corner, El (-) 1 ft.
  TB-37-51 - Reactor Feed Pump Area, El 51 ft.
  TB-38-51 - Between Feed Pumps and Turbine Elev. 51 ft.
  RC-65-51 - Outside Microwave Room El 51 ft.
  RC-62-37 - Maintenance Office Elev. 37 ft.
  RC-63-37 - Maintenance Office North End, El 37 ft.
  RC-64-23 - Maintenance Office Area El 23 ft.
  RC-61-23 - Machine Shop Across from Lathe, El 23 ft.
  RC-67-23 - Access Control Area El 23 ft.

  Turbine Aux Bay

  TA 87-51 - Outside Fan Room #1,, El 51 ft.

Off Gas Retention Bldg

OR-92-06 - Retention Bldg El (-) 6 ft.

Turbine Bldg

TB-28-06 - URC Control Panel El 3 ft.
TB-27-06 - Cond Demin Area Doorway
TB-33-51 - South Wall near VSF-102A El 51 ft.
TB-30-06 - Southeast Corner Pipe Area El 3 ft.
TB-32-51 - South Wall El 51 ft.
TB-26-37 - Recombiner Room Door El 37 ft.

Fire Hose Stations are listed Technical Specifications because they provide either the primary or backup fire suppression capability for a safety related fire area. Our review of proposed Table 3.12-2 identified that the above nineteen hose stations can be deleted without compromising the criteria for inclusion.

- Existing Section 3/4.12D deals with the CO_2 System.

In our submittal of October 13, 1983 we proposed Section 3/4.12E, which reflected our planned substitution of a Halon 1301 system in the Cable Spreading Room (CSR).

The CO_2 hose stations associated with the switchgear rooms of Elevation 23' and 37' currently referenced in 3/4.12D were replaced with waterhose stations. This change was reflected in our proposal of November 11, 1983 werein Table 3.12-2 incorporated the two new stations.

We intended, after testing the Halon system, to provide the appropriate surveillance parameters. However, the dump test, conducted by the system vendor on December 15, 1983, failed to meet the specified criteria.

The vendor and we are in the process of resolving this, but resolution will not be in time to allow us to put this system in Technical Specifications.

We propose, therefore, to continue with our current CO_2 specification modified as follows: (1) Section 3/4.12D will become 3/4.12E, as proposed in October, 1983. This is to ease changing it once the Halon 1301 system is made operational. (2) Reference to CO_2 hose stations for the 37' elevation switchgear room and the 23' elevation switchgear room will be removed. As stated before, these have been replaced with water stations incorporated into proposed Table 3.12-2.

The Halon system will be the subject of a separate submittal when the system meets our test criteria.

- The following statement is added to Section 4.12F to clarify which barriers are of concern:

> Surveillance requirements for penetrations in fire barriers described in specification 3.12.F are as follows:

Reason for Change

These changes are being made to reflect current plant designs and configurations which have been made over the years at PNPS in accordance with fire protection requirements.

Safety Considerations

These changes do not present an unreviewed safety question as defined in 10CFR50.59. They have been reviewed and approved by the Operations Review Committee and reviewed by the Nuclear Safety Review and Audit Committee.

Significant Hazards Consideration

The NRC has provided guidance concerning the application of standards for determining whether license amendments involve significant hazards considerations by providing certain examples (48 FR 14870). One example of an amendment that is considered not likely to involve a significant hazards consideration is "...(ii) A change that constitutes an additional limitation, restriction, or control not presently included in the technical specifications: for example a more stringent surveillance requirement..." Proposed technical specifications of this type are those described above that add restrictions to address plant design changes or conformance to NFPA standards.

Those proposed changes that are deemed desirable, but do not add new restrictions, are examples of "...(vi) A change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria..."

Based on this guidance it has been determined that the amendment request involves no significant hazards consideration. Under the NRC's regulations in 10CFR50.92, this means that operation of the Pilgrim Nuclear Power Station in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

Schedule of Change

This amendment will be effective upon receipt of approval from NRC.

Fee Determination

Pursuant to 10CFR170.12, Boston Edison classifies this change as a Class III amendment. Boston Edison identified this change as one covered by check #837526 which accompanied our letter of January 11, 1984 to Ms. Reba M. Diggs, Facilities Program Coordinator, U.S. Nuclear Regulatory Commission.

ATTACHMENT A

LIMITING CONDITION FOR OPERATION

3.12 FIRE PROTECTION

A. Fire Detection Instrumentation

The fire detection instrumentation for each fire detection zone shown in Table 3.12-1 shall be OPERABLE.

APPLICABILITY:

At all times when equipment in that fire detection zone is required to be OPERABLE.

ACTION:

With the number of OPERABLE fire detection instruments less than required by Table 3.12.1;

a. Within 1 hour, establish a fire watch patrol to inspect the zone with the inoperable instrument(s) at least once per hour; and

b. Restore the inoperable instrument(s) to OPERABLE status within 14 days, or prepare and submit a report to the Commission within the next 30 days outlining the action taken, the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

c. For inoperable fire detectors controlling fire suppression systems, see the respective fire suppression system section, i.e. Section 3.12C for water suppression systems or 3.12E for gaseous suppression systems.

SURVEILLANCE REQUIREMENTS

4.12 FIRE PROTECTION

A. Fire Detection Instrumentation

1. Each of the fire detection instruments noted in Table 3.12-1, shall be demonstrated OPERABLE in accordance with the applicable NFPA 72A or 72D codes by a functional test at least once per 6 months. (2)

2. The fire detection instrumentation nonsupervised circuitry associated with detector alarms shall be demonstrated OPERABLE at least once per 2 months.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
8. Fire Water Supply System The Fire Water Supply System shall be operable with: 1. Two (2) 2000 gpm/125 psig fire pumps which are arranged to start automatically. 2. Two (2) water supplies with a minimum storage quantity of 240,000 gallons of water in each. 3. Two (2) independent water flow paths from Item Nos. 1 & 2 above to each fire water suppression system. (3.12.C and 3.12.D) APPLICABILITY At all times when any safety related equipment is required to be OPERABLE. ACTION: a. With less than the above required equipment, restore the inoperable equipment to OPERABLE status within 7 days or prepare and submit a report to the Commission within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system. b. With no FIRE SUPPRESSION WATER SYSTEM OPERABLE, within 24 hrs. 1. Establish the backup Fire Suppression Water System. 2. If the requirement of b.1 above cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.	**B.** Fire Water Supply System 1. The Fire Water Supply System shall be tested and verified to be OPERABLE: a. by checking the volume of water in each fire water tank at least once every 7 days. b. by automatically starting each fire pump at least once every month and running each pump for thirty minutes at that time. c. by visually checking every shutoff valve on the fire water supply system at least once every month for proper position. d. by cycling each fire water supply system shutoff valve through its full operation at least once per cycle. e. by verifying at least once per cycle that each pump starts and delivers at least 2000 gpm while maintaining a system pressure of at least 125 psig. f. by performing a Water Flow Test on the fire water yard loop at least once every year. g. by verifying at least once every month that the diesel fire pump fuel storage tank contains a minimum of 175 gallons of fuel oil.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
(2)	h. by verifying at least once per 3 months that a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM D270-77, is within the acceptable limits specified in Table 1 of ASTM D975-75 with respect to viscosity, water content, and sediment.
	i. by demonstrating that the diesel starting 24-volt battery bank and charger are OPERABLE as follows:
	1. at least once per week by verifying that the electrolyte level of each battery is above the plates and battery voltage is at least 24 volts.
	2. at least once per 3 months by verifying that the specific gravity is appropriate for continued service of the battery.
	3. at least once per operating cycle by verifying that the batteries, all plates, and battery racks show no visual indication of physical damage or abnormal deterioration and the battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS
C. Spray and/or Sprinkler Systems The spray and/or sprinkler systems located in the following areas shall be OPERABLE except as noted below: 1. Diesel Generator Room Preaction sprinkler systems (including detectors). 2. Diesel Fire Pump Fuel Oil Storage Room wet pipe sprinkler system. 3. Auxiliary Boiler Room wet pipe sprinkler system. 4. Recirculation Pump MG Set Room wet pipe sprinkler system. 5. Standby Gas Treatment System water spray system. 6. Hydrogen Supply Oil Unit preaction sprinkler system. 7. Turbine Basement Addition wet pipe sprinkler system. APPLICABILITY At all times when equipment in the spray/sprinkler protected area is required to be OPERABLE. ACTIONS: a. From and after the date that a spray and/or sprinkler system is made or found to be INOPERABLE, within one hour establish a continuous fire watch patrol with backup suppression, except as specified in 3.12.C.b. and 3.12.C.c. (2) b. If the suppression system of 3.12.C.1, or 5 is inoperable, establish an hourly fire watch patrol with backup suppression provided that the detection system in that fire area and the detection and suppression system for the redundant fire area is operable.	C. Spray and/or Sprinkler Systems The spray and/or sprinkler systems shall be demonstrated to be OPERABLE according to the following: 1. Each sprinkler system and water spray system alarm shall be tested at least once every year by opening the alarm bypass or inspector test valve. Alarms in high rad area are to be tested once per cycle. 2. Each wet pipe sprinkler system shall be proven to be unobstructed by opening the inspector test connection at least once per cycle. 3. Each preaction sprinkler system shall be trip tested at least once per cycle. 4. Each water spray system shall be trip tested automatically by simulated actuation of the heat detectors at least once per cycle. 5. At least once per 3 years, a flow test through each open head spray/sprinkler header shall be performed and each open head spray/sprinkler nozzle shall be verified to be unobstructed.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENTS

c. If two or more detectors of 3.12.C.1 are found or made to be inoperable, within one hour charge that sprinkler system piping with water.

(2) d. Restore the system to OPERABLE status within 14 days or prepare and submit a report to the Commission within the next 30 days outlining the action taken, the cause of inoperability and the plans for restoring the system to OPERABLE status.

(2) EXCEPTION: When the fire area protected by a spray and/or sprinkler system is designated "HIGH RADIATION AREA/AIRBORNE RADIOACTIVITY AREA", an hourly fire watch patrol may be established (e.g. for ALARA considerations) in lieu of a continuous fire watch patrol.

D. Fire Hose Stations

The interior fire hose stations shown in Table 3.12-2 shall be OPERABLE.

APPLICABILITY:

At all times when the equipment in the area protected by the fire hose station is required to be OPERABLE.

ACTION:

With a hose station INOPERABLE, provide an additional equivalent capacity hose for the unprotected area at/from an OPERABLE hose station within one (1) hour.

D. Fire Hose Stations

Each interior fire hose station shall be verified to be OPERABLE:

1. At least once per month by visual inspection of the station to assure that the hose and nozzle are properly installed.

2. At least once per cycle by removing the hose for inspection, replacing any degraded coupling gaskets and reracking.

3. At least once per three (3) years by:

   a. partially opening each hose station valve to verify valve operability and no obstruction.

   b. by conducting a hydrostatic test of each hose:

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENTS

1) at a pressure 50 psig greater than the maximum available pressure at that hose station, or

2) annually at the applicable service test pressure as listed in Table 821 of the "Standard for Care, Maintenance and Use of Hose" NFPA No. 198-1972, or

c. by replacing each hose with a new or used hose which has been hydrostatically tested in accordance with the pressures specified in 4.12.D.3.b.

2 E. CO_2 SYSTEM

The following CO_2 system shall be OPERABLE with a minimum level of 60% and a minimum pressure of 275 psig in the associated storage tank(s).

2 1. Cable Spreading Room

APPLICABILITY:

At all times when the equipment in the area is required to be OPERABLE.

ACTION:

a. With a CO_2 system inoperable, establish a continuous fire watch patrol with backup fire suppression equipment for the unprotected area(s) within 1 hour.

2 E. CO_2 System

The CO_2 System shall be demonstrated OPERABLE:

1. At least once per 7 days by verifying the CO_2 storage tank level and pressure.

2. At least once per cycle by verifying the system valves and associated ventilation dampers actuate automatically and manually to a simulated actuation signal. A brief flow test shall be made to verify flow from each nozzle. ("Puff Test").

LIMITING CONDITION FOR OPERATION

E. CO_2 SYSTEM (Cont'd)

b. Restore the system to OPERABLE status within 14 days or prepare and submit a report to the Commission within the next 30 days outlining the action taken, the cause of inoperability and the plans for restoring the system to OPERABLE status.

F. Fire Barrier System

All fire barrier systems providing separation of redundant safe shutdown systems shall be functional.

APPLICABILITY:

At all times when the safe shutdown systems are required to be operable.

ACTION:

With one or more of the required fire barrier systems nonfunctional, within one hour either establish a continuous fire watch patrol on one side of the affected barrier or verify the OPERABILITY of an automatic fire detection or suppression system on at least one side of the nonfunctional fire barrier and establish an hourly fire watch patrol.

EXCEPTION: When the Fire Areas on BOTH sides of the effected fire barrier are designated "HIGH RADIATION AREAS/AIRBORNE RADIOACTIVITY AREA", an hourly fire watch patrol may be established (e.g. for ALARA considerations) in lieu of a continuous fire watch patrol.

(2)

SURVEILLANCE REQUIREMENTS

F. Fire Barrier Penetrations

Surveillance requirements for penetrations in fire barriers described in specification 3.12.F are as follows:

1. Fire Barrier Penetration Seals

Each fire barrier penetration seal shall be verified to be functional by a visual inspection at least once per operating cycle and subsequent to any installation, modification or maintenance affecting the seal.

2. Fire Doors

Each fire door shall be tested once per cycle for operability of closure and latching mechanisms and for integrity.

3. Fire Dampers

Each fire damper shall be tested once per cycle for operability and integrity.

LIMITING CONDITION FOR OPERATION

G. Alternate Shutdown Panels

1. Alternate shutdown panels for the systems listed below shall be OPERABLE at all times that the system is required to be operable except as specified in 3.12G.2.

   a. Core Spray
   b. RHR
   c. RBCCW
   d. Salt Service Water
   e. HPCI
   f. RCIC
   g. Automatic Depressurization
   h. Diesel Generators

2. With any of the alternate shutdown panels inoperable, immediately verify that fire detection with automatic fire suppression for the Cable Spreading Room is OPERABLE. If fire detection with automatic fire suppression cannot be determined operable, take appropriate action as described in Section 3.12.E of the Tech. Spec.

SURVEILLANCE REQUIREMENTS

G. Alternate Shutdown Panels

1. Components listed below shall be operated from the alternate shutdown panels once/cycle.

   Core Spray

   Motor operated valves.

   RHR

   Motor operated valves utilizing the MCC B-17 alternate power source.

   SSWS

   Pumps

   RBCCWS

   Pumps and motor operated valves.

2. Alternate shutdown panel capability for the systems listed below shall be verified to be operable once/cycle.

   RCIC

   HPCI

3. The systems listed below shall be tested as follows:

AUTOMATIC DEPRESSURIZATION SYSTEM (ADS)

Perform a test from the alternate shutdown panel to verify that the relief valve solenoids actuate. Test shall be performed after each refueling outage prior to startup.

DIESEL GENERATORS

Once/refueling outage the diesel generator control circuits shall be isolated from the Cable Spreading Room and the diesel generator started and loaded.

TABLE 3.12-1

FIRE DETECTION INSTRUMENTS

Building/ Fire Area	Elevation	Local Panel No./ Zone No.	Total No. Detectors In Zone	Minimum Instruments Operable In Zone
Reactor Building Clothes Change Area	91'3"	C225/ 5 C-2	2	2
Reactor Building RBCCW "A"	3'0"	C222/ 2A	11	9
Reactor Building RBCCW "B"	3'0"	C222/B	13	11
Reactor Building Recirc. Pump M.G. Set Room	51'0"	C96/A/B	8	7
Turbine Building Switchgear Room "A"	37'	C94/3	11	9
Turbine Building Switchgear Room "B"	23'	C221/1B C94/2	7 13	6 10
Turbine Building Battery Room "A"	37'	C94/7	3	2
Turbine Building Battery Room "B"	23'	C94/8	3	2
Off Gas Retention Building	23'	C113/1	4	4
Control Room Cabinets	37'	C 94/6	1	1
		C221/3	3	3
		C221/4	3	3
		C221/5	3	3
		C221/6	3	3
		C221/7	3	3
		C221/8	3	3
		C221/2	5	4
Vital M.G. Set Room	23'	C221/1	5	4

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TABLE 3.12-1

FIRE DETECTION INSTRUMENTS

Building/ Fire Area	Elevation	Local Panel No./ Zone No.	Total No. Detectors In Zone	Minimum Acceptable No. of Operable Detectors In Zone
Reactor Building RHR - Core Spray "A"	(-)17'6"	C224/4A	3	2
Reactor Building RHR - Core Spray "B"	(-)17'6"	C223/3C	3	2
Reactor Building HPCI	(-)17'6"	C223/3D	2	1
		C223/3E	2	1
Reactor Building RCIC	(-)17'6"	C223/3A	2	1
		C223/3B	2	1
Reactor Building CRD - East	23'	C224/4E	12	10
		C224/4F	7	6
		C224/4C	9	8
		C224/4D	9	8
		C224/4G	5	4
		C224/4H	2	2
Reactor Building CRD - West	23'	C223/3F	9	8
		C223/3J	10	8
		C223/3G	10	8
		C223/3H	11	9
		C223/3I	2	2
Reactor Building	51'	C225/5A1	18	16
		C225/5A2	6	5
		C225/5A3	2	2
		C225/5A4	4	3
Reactor Building Fuel Pool Heat Exchanger Area	74'3"	C225/5B2	8	7
Reactor Building North Side	74'3"	C225/5B1	18	16
		C225/5B3	2	2
Reactor Building Standby Liquid Control System Tank Area	91'3"	C225/5C3	6	5
Reactor Building North Side	91'3"	C225/5C1	25	22

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TABLE 3.12-2

FIRE HOSE STATIONS

REACTOR BUILDING

Sta. #	
RB-13-117	North Wall, Elev. 117'
RB-06-117	South Wall, Elev. 117'
RB-12-91	North Wall, Elev. 91'
RB-05-91	Standby Liquid Control, System Area, Elev. 91'
RB-11-74	North Wall, Elev. 74'
RB-04-74	Fuel Pool Heat Exchanger Area, Elev. 74'
RB-09-51	North Wall, Elev. 51'
RB-03-51	Outside MG Set Room - West Wall, Elev. 51'
RB-10-51	Inside North MG Set Airlock Elev. 51'
RB-14-23	Decontamination Room North Wall, Elev. 23'
RB-07-23	West Wall, RHR Loop B Stairway, Elev. 23'
RB-02-23	West Wall, RCIC Stairway Elev. 23'
RB-16-23	Reactor Bldg. Access Lock Elev. 23'
RB-15-03	CRD Quadrant Elev. 2'9"
RB-17-03	RHR Quad Loop A Elev. 2'9"
RB-08-03	RHR Quad Loop B Elev. 2'9"
RB-01-03	RCIC Quad Elev. 2'9"

SECONDARY CONTAINMENT ACCESS LOCK

Sta. #	
SL-81-23	Reactor Bldg. Truck Lock Elev. 23'

REACTOR AUX. BAY

RA-41-23	Auxiliary Plant Heating Boiler Room Elev. 23'
RA-42-06	RBCCW Loop B Area Elev. 3'
RA-44-06	Condensate Demin./Resin Corridor Area Elev. 3'

RADWASTE & CONTROL AREA

RC-57-01	Radwaste Stairway to Turbine Bldg. Elev. -1'
RC-69-01	Outside Radwaste Control Room Elev. -1'
RC-56-23	Water Box Scavenging Pump Area, Elev. 23'
RC-58-23	Stairway Outside Vital MG Set Room Elev. 23'
RC-72-23	Corridor Switchgear Room B Elev. 23'
TB-39-51	East Wall Near B-8 Load Center Elev. 51'

(2)

TABLE 3.12-2 (Continued)

TURBINE BUILDING

Sta. #

TB-35-06 West End Elev. 6'
TB-29-06 East Wall Elev. 6'

TB-31-51 South Wall, Elev. 51'
TB-34-51 West Wall Elev. 51'

TURBINE AUX. BAY

TA-86-51 Outside Standby Gas Room

OFF-GAS RETENTION BUILDING

OR-91-23 Retention Building, Elev. 23'
OR-93-05 Retention Building, Elev. 5'

DIESEL GENERATORS

DG-46-23 Diesel Generator Room A
DG-47-23 Diesel Generator Room B

INTAKE STRUCTURE

IS-96-23 Near Fire Pumps

RADWASTE & CONTROL AREA (Continued)

RC-59-37 Stairway Outside Control Room Elev. 37'
RC-66-37 Radiation Chemical Lab Elev. 37'

(2)

BASES:

3/4.12A FIRE DETECTION INSTRUMENTATION

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of the fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, increasing the frequency of fire watch patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is returned to operability.

3/4.12B, C, D, E FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, CO_2 and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression system are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the affected equipment can be restored to service.

In the event that portions of the fire suppression water system become inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the affected equipment can be restored to service.

In the event that the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

BASES

3/4.12F FIRE BARRIER SYSTEM

The functional integrity of the fire barrier system ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. A functional fire barrier system, is considered to be the barrier itself with all penetration seals, doors and dampers intact or operable. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire barrier systems are a passive element in the facility fire protection program and are subject to periodic inspections.

Safe shutdown systems are those systems which must operate after a loss of offsite power and are required to achieve and maintain safe shutdown (hot and cold shutdown) conditions.

During periods of time when the barriers are not functional, either, 1) a continuous fire watch patrol is required to be maintained in the vicinity of the affected barrier, or 2) the automatic fire detection or suppression system on at least one side of the affected barrier must be verified OPERABLE and an hourly fire watch patrol established until the barrier is restored to functional status. A fire watch patrol is a compensatory measure to survey area(s) in which the active and/or passive fire detection, suppression or barrier system(s) are in a degraded mode and is utilized for detection and reporting of fires.

The surveillance requirements are considered to be adequate since they were determined using accepted industry reference material as a basis applying good engineering judgement and station operating considerations.

BASES
3.12G Alternate Shutdown Panels

The alternate shutdown system, independent of cabling and equipment in the Cable Spreading Room is provided to effect safe shutdown of Pilgrim in the event of a fire in the Cable Spreading Room. This is accomplished by installing isolation switches for safety-related equipment that will provide the capability for the plant operators to reach a safe shutdown condition. These switches will isolate their associated equipment from the CSR cables, thus transfer control from the Control Room to the local emergency shutdown stations outside the CSR. These isolation switches are located in alternate shutdown panels and are located as close as practical to the equipment or switchgear they serve.

The operability of the fire suppression and detection system in the Cable Spreading Room in conjunction with the passive element of cable coating ensures that adequate fire protection/detection/suppression capability is available to quickly detect, confine and extinguish fires occurring in any portion of the room where safety-related equipment is located. The fire detection/suppression system consists of an independent smoke detection system, an automatic Halon 1301 Fire Suppression system and fire hose stations available outside the doorways to the Cable Spreading Room. The collective capability of passive protection and detection with either manual or automatic suppression is adequate to minimize potential damage to safety-related equipment and is a major element in the facility fire protection program.

An emergency shutdown procedure, which is compatible with the design modifications and plant operator availability, provides step-by-step actions to initiate safe shutdown operation. Operator actions to isolate safety-related cables passing through the CSR is initiated as soon as a fire which is not immediately extinguishable is detected and confirmed in the CSR.

Alternate shutdown panels are provided for the following systems:

a. Core Spray
b. RHR
c. RBCCW
d. Salt Service Water
e. HPCI
f. RCIC
g. Automatic Depressurization System
h. Diesel Generators

Inoperability of the above listed systems does not require entry into LCO action statements for the alternate shutdown panels.

A surveillance frequency of once per cycle is considered prudent and more frequent testing not warranted. The frequency of once per refueling outage for testing the diesel generators prevents unnecessarily rendering them inoperable during normal power operation. The frequency of once per refueling outage for the Automatic Depressurization System is consistant with the existing surveillance frequency for this system. Requiring this surveillance to be performed during a refueling outage will also assure that plant conditions will allow for safe access to the ADS solenoids.

ATTACHMENT B

LIMITING CONDITIONS FOR OPERATION

3.5 CORE AND CONTAINMENT COOLING SYSTEMS

Applicability

Applies to the operational status of the core and suppression pool cooling subsystems.

Objective

To assure the operability of the core and suppression pool cooling subsystems under all conditions for which this cooling capability is an essential response to station abnormalities.

Specification

A. Core Spray and LPCI Subsystems

1. Both core spray subsystems shall be operable whenever irradiated fuel is in the vessel and prior to reactor startup from a Cold Condition, except as specified in 3.5.A.2 below.

SURVEILLANCE REQUIREMENT

4.5 CORE AND CONTAINMENT COOLING SYSTEMS

Applicability

Applies to the Surveillance Requirement of the core and suppression pool cooling subsystems which are required when the corresponding limiting Condition for operation is in effect.

Objective

To verify the operability of the core and suppression pool cooling subsystems under all conditions for which this cooling capability is an essential response to station abnormalities.

Specification

A. Core Spray and LPCI Subsystems

1. Core Spray Subsystem Testing

	Item	Frequency
a.	Simulated Automatic Actuation test.	Once/Operating Cycle
b.	Pump Operability	Once/month
c.	Motor Operated Valve Operability	Once/month
d.	Pump flow rate. Each pump shall deliver at least 3600 gpm against a system head corresponding to a reactor vessel pressure at 104 psig.	
e.	Core Spray Header Δp Instrumentation	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
3.5.A Core Spray and LPCI Subsystems (Cont'd)	4.5.A Core Spray and LPCI Subsystems (Cont'd)
	Check — Once/Day Calibrate — Once/3 months Test — Once/3 months
2. From and after the date that one of the core spray subsystems is made or found to be inoperable for any reason, continued reactor operation is permissible during the succeeding seven days, provided that during such seven days all active components of the other core spray subsystem and active components of the LPCI subsystem and the diesel generators are operable.	2. When it is determined that one core spray subsystem is inoperable, the operable core spray subsystem, the LPCI subsystem and the diesel generators shall be demonstrated to be operable immediately. The operable core spray subsystem shall be demonstrated to be operable daily thereafter.
3. The LPCI Subystems shall be operable whenever irradiated fuel is in the reactor vessel, and prior to reactor startup from a Cold Condition, except as specified in 3.5.A.4, 3.5.A.5 and 3.5.F.5.	3. LPCI Subsystem Testing shall be as follows: a. Simulated Automatic Actuation Test — Once/Operating Cycle b. Pump Operability — Once/month c. Motor Operated Valve Operability — Once/month d. Pump Flow — Once/3 months Three LPCI pumps shall deliver 14,400 gpm against a system head corresponding to a vessel pressure of 20 psig.

LIMITING CONDITIONS FOR OPERATION

*3.5.B Containment Cooling Subsystem

1. Except as specified in 3.5.B.2, 3.5.B.3, and 3.5.F.3 below, both containment cooling subsystem loops shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F, and prior to reactor startup from a Cold Condition.

*Conditional relief granted from this LCO for the period October 31, 1980 through November 7, 1980.

SURVEILLANCE REQUIREMENT

4.5.B Containment Cooling Subsystem

1. Containment Cooling Subsystem Testing shall be as follows:

	Item	Frequency
a.	Pump & Valve Operability	Once/3 months
b.	Pump Capacity Test. Each RBCCW pump shall deliver 1700 gpm at 70 Ft. TDH. Each SSWS pump shall deliver 2700 gpm at 55 ft. TDH.	After pump maintenance and every 3 months
c.	Air test on drywell and torus headers and nozzles	Once/5 years

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
*3.5.B Containment Cooling Subsystem	4.5.B Containment Cooling Subsystem (Cont'd)
2. From and after the date that one containment cooling subsystem loop is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding seven days unless such subsystem loop is sooner made operable, provided that the other containment cooling subsystem loop, including its associated diesel generator, is operable.	2. When one containment cooling subsystem loop becomes inoperable, the operable subsystem loop and its associated diesel generator shall be demonstrated to be operable immediately and the operable containment cooling subsystem loop daily thereafter.
3. If the requirements of 3.5.B cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.	
C. HPCI Subystem	C. HPCI Subsystem
1. The HPCI Subsystem shall be operable whenever there is irradiated fuel in the reactor vessel, reactor pressure is greater than 104 psig, and prior to reactor startup from a Cold Condition, except as specified in 3.5.C.2 and 3.5.C.3 below.	1. HPCI Subsystem testing shall be performed as follows:

a.	Simulated Automatic Actuation Test	Once/operating cycle
b.	Pump Operability	Once/month
c.	Motor Operated Valve Operability	Once/month
d.	Flow Rate at 1000 psig	Once/3 months
e.	Flow Rate at 150 psig	Once/operating cycle

*Conditional relief granted from this LCO for the period October 31, 1980 through November 7, 1980.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
3.5.C HPCI Subsystem (Cont'd)	4.5.C HPCI Subsystem (Cont'd)
	The HPCI pump shall deliver at least 4250 gpm for a system head corresponding to a reactor pressure of 1000 to 150 psig.
2. From and after the date that the HPCI Subsystem is made or found to be inoperable for any reason, continued reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, providing that during such seven days all active components of the ADS subsystem, the RCIC system, the LPCI subsystem and both core spray subsystems are operable.	2. When it is determined that the HPCI Subsystem is inoperable the RCIC, the LPCI subsystem, both core spray subsystems, and the ADS subsystem actuation logic shall be demonstrated to be operable immediately. The RCIC system and ADS subsystem logic shall be demonstrated to be operable daily thereafter.
3. If the requirements of 3.5.C cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to or below 104 psig within 24 hours.	
3.5.D Reactor Core Isolation Cooling (RCIC) Subsystem	4.5.D Reactor Core Isolation Cooling (RCIC) Subsystem
1. The RCIC Subsystem shall be operable whenever there is irradiated fuel in the reactor vessel, the reactor pressure is greater than 104 psig, and prior to reactor startup from a Cold Condition, except as specified in 3.5.D.2 below.	1. The RCIC Subsystem testing shall be performed as follows:

a.	Simulated Automatic Actuation Test	Once/operating cycle
b.	Pump Operability	Once/month
c.	Motor Operated Valve Operability	Once/month

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.5.D Reactor Core Isolation Cooling (RCIC) Subsystem (Cont'd)	4.5.D Reactor Core Isolation Cooling (RCIC) Subsystem (Cont'd)
	d. Flow Rate at 1000 psig — Once/3 months
	e. Flow Rate at 150 psig — Once/operating cycle
	The RCIC pump shall deliver at least 400 gpm for a system head corresponding to a reactor pressure of 1000 to 150 psig.
2. From and after the date that the RCICS is made or found to be inoperable for any reason, continued reactor power operation is permissible only during the succeeding seven days provided that during such seven days the HPCIS is operable.	2. When it is determined that the RCIC subsystem is inoperable, the HPCIS shall be demonstrated to be operable immediately and weekly thereafter.
3. If the requirements of 3.5.D cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to or below 104 psig within 24 hours.	
3.5.E Automatic Depressurization System (ADS)	4.5.E Automatic Depressurization System (ADS)
1. The Automatic Depressurization Subsystem shall be operable whenever there is irradiated fuel in the reactor vessel and the reactor pressure is greater than 104 psig and prior to a startup from a Cold Condition, except as specified n 3.5.E.2 below.	1. During each operating cycle the following tests shall be performed on the ADS: a. A simulated automatic actuation test shall be performed prior to startup after each refueling outage. b. With the reactor at pressure, each relief valve shall be manually opened until a corresponding change in reactor pressure or main turbine bypass valve positions indicate that steam is flowing from the valve.

LIMITING CONDITIONS FOR OPERATION

3.9 AUXILIARY ELECTRICAL SYSTEM

Applicability:

Applies to the auxiliary electrical power system.

Objective:

To assure an adequate supply of electrical power for operation of those systems required for safety.

Specification:

A. Auxiliary Electrical Equipment

The reactor shall not be made critical unless all of the following conditions are satisfied.

1. At least one offsite transmission line and the startup transformer are available and capable of automatically supplying auxiliary power to the emergency buses.

2. An additional source of offsite power consisting of one of the following:

a. A transmission line and shutdown transformer capable of supplying power to the emergency 4160 volt buses.

b. The main transformer and unit auxiliary transformer available and capable of supplying power to the emergency 4160 volt buses.

3. Both diesel generators shall be operable. Each diesel generator shall have a minimum of 19,800 gallons of diesel fuel on site.

SURVEILLANCE REQUIREMENTS

4.9 AUXILIARY ELECTRICAL SYSTEM

Applicability:

Applies to the periodic testing requirements of the auxiliary electrical systems.

Objective:

Verify the operability of the auxiliary electrical system.

Specification:

A. Auxiliary Electrical Equipment Surveillance

1. Diesel Generators

a. Each diesel generator shall be manually started and loaded once each month to demonstrate operational readiness. The test shall continue for at least a one hour period at rated load.

During the monthly generator test the diesel generator starting air compressor shall be checked for operation and its ability to recharge air receivers. The operation of the diesel fuel oil transfer pumps shall be demonstrated, and the diesel starting time to reach rated voltage and frequency shall be logged.

b. Once per operating cycle the condition under which the diesel generator is required will be simulated and a test conducted to demonstrate that it will start and accept the emergency load within the specified time sequence. The results shall be logged.

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