Indian Point 2
Technical Requirements Manual
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LIST OF EFFECTIVE SECTIONS

TRM SECTION	Rev	Page(s)	EFFECTIVE DATE
Table of Contents	**17**	**3**	**07/28/2018**
1.1	1	1	12/12/2003
1.2	1	1	12/12/2003
1.3	1	1	12/12/2003
1.4	1	1	12/12/2003
1.5	**3**	**4**	**07/28/2018**
2.0		NOT USED	
3.0	2	4	02/02/2006
B 3.0	4	13	02/07/2006
3.1.A	1	1	12/12/2003
B 3.1.A	1	1	12/12/2003
3.1.B.1	3	3	04/30/2018
B 3.1.B.1	1	1	12/12/2003
3.1.B.2	2	3	04/30/2018
B 3.1.B.2	1	1	12/12/2003
3.1.C	1	1	12/12/2003
B 3.1.C	1	1	12/12/2003
3.2.A	3	1	11/17/2014
B3.2.A	3	1	11/17/2014
3.3.A	1	3	12/12/2003
B 3.3.A	1	1	12/12/2003
3.3.B	3	1	11/17/2014
B 3.3.B	3	1	11/28/2012
3.3.C	**3**	**2**	**07/28/2018**
B 3.3.C	1	1	12/12/2003
3.3.D	1	2	12/12/2003
B 3.3.D	1	1	12/12/2003
3.3.E	1	2	12/12/2003
B 3.3.E	1	1	12/12/2003
3.3.F	1	1	12/12/2003
B 3.3.F	1	1	12/12/2003
3.3.G	4	3	03/14/2006
B 3.3.G	1	1	12/12/2003
3.3.H	1	1	12/12/2003
B 3.3.H	2	1	12/12/2003
3.3.I	1	1	12/12/2003
B 3.3.I	2	1	12/12/2003
3.3.J	1	1	12/12/2003
B 3.3.J	1	1	12/12/2003
3.3.K	**1**	**2**	**7/28/2018**
B 3.3.K	**2**	**1**	**7/28/2018**

TRM SECTION	Rev	Page(s)	EFFECTIVE DATE
3.3.L	1	1	04/04/2018
B 3.3.L	**3**	**1**	**07/28/2018**
3.4.A.1	1	3	12/12/2003
B 3.4.A.1	1	1	12/12/2003
3.4.A.2	1	3	12/12/2003
B 3.4.A.2	1	1	12/12/2003
3.4.B	1	2	12/12/2003
B 3.4.B	1	1	12/12/2003
3.4.C	1	1	12/12/2003
B 3.4.C	1	1	12/12/2003
3.4.D	2	3	04/18/2012
B 3.4.D	3	2	04/04/2018
3.4.E	2	1	03/21/2014
B 3.4.E	2	1	03/21/2014
3.4.F		NOT USED	
3.4.G		NOT USED	
3.4.H	1	1	12/12/2003
B 3.4.H	1	1	12/12/2003
3.4.I		NOT USED	
3.4.J		NOT USED	
3.4.K		NOT USED	
3.5		NOT USED	
3.6		NOT USED	
3.7.A	4	1	05/07/2015
B 3.7.A	**3**	**1**	**07/28/2018**
3.7.B	1	3	12/12/2003
B 3.7.B	1	1	12/12/2003
3.7.C		NOT USED	
3.7.D	**5**	**2**	**07/28/2018**
B 3.7.D	**5**	**2**	**07/28/2018**
3.7.E	3	1	04/04/2018
B 3.7.E	**4**	**3**	**07/28/2018**
3.7.F	2	4	03/31/2004
B 3.7.F	1	2	12/12/2003
3.7.G	3	3	09/15/2017
B 3.7.G	**4**	**5**	**07/28/2018**
3.7.H	2	2	04/04/2018
B 3.7.H	**3**	**3**	**07/28/2018**
3.7.I	**2**	**2**	**07/28/2018**
B 3.7.I	**2**	**2**	**07/28/2018**
3.7.J	**2**	**1**	**07/28/2018**

TRM SECTION	Rev	Page(s)	EFFECTIVE DATE
B 3.7.J	**2**	**3**	**07/28/2018**
3.8.A	1	1	12/12/2003
B 3.8.A	1	1	12/12/2003
3.8.B	**5**	**2**	**07/28/2018**
B 3.8.B	**5**	**4**	**07/28/2018**
3.8.C	**4**	**2**	**07/28/2018**
B3.8.C	5	3	03/26/2018
3.9.A	2	1	02/02/2006
B 3.9.A	**3**	**3**	**07/28/2018**
3.9.B	3	3	04/15/2018
B 3.9.B	3	1	03/26/2018
3.9.C	2	1	03/31/2004
B 3.9.C	2	1	05/17/2011
3.9.D	1	1	12/12/2003
B 3.9.D	1	1	12/12/2003
3.9.E	**1**	**1**	**07/28/2018**
B 3.9.E	**1**	**2**	**07/28/2018**
3.10.A	**1**	**2**	**07/28/2018**
B 3.10.A	**1**	**2**	**07/28/2018**
3.10.B	**1**	**2**	**07/28/2018**
B 3.10.B	**1**	**2**	**07/28/2018**
3.10.C	**1**	**2**	**07/28/2018**
B 3.10.C	**1**	**3**	**07/28/2018**
3.11.A	**1**	**2**	**07/28/2018**
B 3.11.A	**1**	**3**	**07/28/2018**
4.0		NOT USED	
5.0	14	15	03/26/2018

3.4 REACTOR COOLANT SYSTEMS (RCS)

3.5 EMERGENCY CORE COOLING (Not Used)

3.6 CONTAINMENT SYSTEMS (Not Used)

3.7 PLANT SYSTEMS

3.8 ELECTRICAL POWER SYSTEMS

1.0 USE AND APPLICATION

1.5 Technical Requirements Manual Administrative Controls

Changes to the Technical Requirements Manual (TRM) shall be made under the appropriate administrative controls and reviews. Table 1.5-1 gives the appropriate control for each section of the TRM.

Table 1.5-1
Page 1 of 3

TRM SECTION		CHANGE PROCESS
1.1	Definitions	10 CFR 50.59
1.2	Logical Connectors	10 CFR 50.59
1.3	Completion Times	10 CFR 50.59
1.4	Frequency	10 CFR 50.59
1.5	Technical Requirements Manual Administrative Controls	10 CFR 50.59
3.0	TRO / TRS Applicability	10 CFR 50.59
3.1.A	Rod Position Deviation Monitor Alarm	10 CFR 50.59
3.1.B.1	Boration System — Operating	10 CFR 50.59
3.1.B.2	Boration System — Shutdown	10 CFR 50.59
3.1.C	Control Rod Protection System	10 CFR 50.59
3.2.A	Quadrant Power Tilt Deviation Alarm	10 CFR 50.59
3.3.A	Meteorological Monitoring Instrumentation	10 CFR 50.59
3.3.B	RHR Flow Monitoring Instrumentation	10 CFR 50.59
3.3.C	Service Water (SW) Inlet Temperature Monitoring and Instrumentation	10 CFR 50.59
3.3.D	Spent Fuel Storage Area Radiation Monitoring	10 CFR 50.59
3.3.E	Containment Area Radiation Monitoring	10 CFR 50.59

Table 1.5-1
Page 2 of 3

TRM SECTION		CHANGE PROCESS
3.3.F	Axial Flux Difference Alarm	10 CFR 50.59
3.3.G	Post Accident Monitoring PAM) Instrumentation	10 CFR 50.59
3.3.H	Safety Injection (SI) Accumulator Instrumentation	10 CFR 50.59
3.3.I	Process Radiation Monitoring	10 CFR 50.59
3.3.J	Area Radiation Monitoring	10 CFR 50.59
3.3.K	Main Feedwater Leading Edge Flowmeter	10 CFR 50.59
3.4.A.1	Reactor Coolant System (RCS) Chemistry $T_{avg} > 250°F$	10 CFR 50.59
3.4.A.2	Reactor Coolant System (RCS) Chemistry $T_{avg} \leq 250°F$	10 CFR 50.59
3.4.B	Reactor Vessel Head Vents	10 CFR 50.59
3.4.C	Pressurizer Temperature Limits	10 CFR 50.59
3.4.D	Containment Free Volume Leakage	10 CFR 50.59
3.4.E	Pressurizer Safety Valves	10 CFR 50.59
3.4.H	Pressurizer Power Operated Relief Valve (PORV) — Backup Nitrogen System	10 CFR 50.59
3.7.A	Shock Suppressors (Snubbers)	10 CFR 50.59
3.7.B	Explosive Gas Monitoring	10 CFR 50.59
3.7.D	Electrical Tunnel Ventilation System	10 CFR 50.59
3.7.E	City Water Supply	10 CFR 50.59
3.7.F	Post Accident Containment Venting System	10 CFR 50.59

Table 1.5-1
Page 3 of 3

TRM SECTION		CHANGE PROCESS
3.8.A	Emergency Lighting Panel 218	10 CFR 50.59
3.8.C	Technical Support Center (TSC) Diesel Generator and TSC Plant Computer Uninterruptible Power Supply (UPS)	10 CFR 50.59
3.9.A	Decay Time — Refueling	10 CFR 50.59
3.9.B	Refueling With the Reactor Vessel Head Bolts Less Than Fully Tensioned	10 CFR 50.59
3.9.C	Fuel Storage and Operations With Irradiated Fuel in the Spent Fuel Pit	10 CFR 50.59
3.9.D	Refueling Operations in the Spent Fuel Storage Area	10 CFR 50.59
3.9.E	Ederer Gantry Crane	10 CFR 50.59
3.10.A	Diverse and Flexible Coping Strategies (FLEX) Equipment	10 CFR 50.59
3.10.B	FLEX Fluid and Electrical Connections	10 CFR 50.59
3.10.C	Spent Fuel Pool Level Instrumentation	10 CFR 50.59
3.11.A	B.5.b Equipment	10 CFR 50.59
5.1	Responsibilities	10 CFR50.59
5.2	Technical Requirements Manual Update and Bases Control	10 CFR50.59
5.3	Procedures	10 CFR 50.59
5.4	Reporting Requirements	10 CFR 50.59
5.5	Programs	10 CFR 50.59
5.6	Record Retention	10 CFR 50.59

1.0 USE AND APPLICATION

1.1 Definitions

- NOTES -

1. Definitions are defined in Section 1.1 of the Technical Specifications and are applicable throughout the Technical Requirements Manual (TRM) and Bases. Only definitions specific to the TRM will be defined in this section.

2. The defined terms of this section and the Technical Specifications (TS) appear in capitalized type and are applicable throughout the TRM and the TRM Bases.

3. When a term is defined in both the TS and the TRM, TRM definition takes precedence within the TRM and the TRM Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Requirement that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
OPERABLE — OPERABILITY	A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified function(s) are also capable of performing the related support function(s).

1.0 USE AND APPLICATION

1.2 Logical Connectors

Logical Connectors are discussed in Section 1.2 of the Technical Specifications and are applicable throughout the Technical Requirements Manual and Bases.

1.0 USE AND APPLICATION

1.3 Completion Times

Completion Times are discussed in Section 1.3 of the Technical Specifications and are applicable throughout the Technical Requirements Manual and Bases.

1.0 USE AND APPLICATION

1.4 Frequency

Frequency is discussed in Section 1.4 of the Technical Specifications and is applicable throughout the Technical Requirements Manual and Bases.

1.0 USE AND APPLICATION

1.5 Technical Requirements Manual Administrative Controls

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Page 1 of 3

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3.3.B	RHR Flow Monitoring Instrumentation	10 CFR 50.59
3.3.C	Service Water (SW) Inlet Temperature Monitoring and Instrumentation	10 CFR 50.59
3.3.D	Spent Fuel Storage Area Radiation Monitoring	10 CFR 50.59
3.3.E	Containment Area Radiation Monitoring	10 CFR 50.59

Table 1.5-1
Page 2 of 3

TRM SECTION		CHANGE PROCESS
3.3.F	Axial Flux Difference Alarm	10 CFR 50.59
3.3.G	Post Accident Monitoring PAM) Instrumentation	10 CFR 50.59
3.3.H	Safety Injection (SI) Accumulator Instrumentation	10 CFR 50.59
3.3.I	Process Radiation Monitoring	10 CFR 50.59
3.3.J	Area Radiation Monitoring	10 CFR 50.59
3.3.K	Main Feedwater Leading Edge Flowmeter	10 CFR 50.59
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3.4.E	Pressurizer Safety Valves	10 CFR 50.59
3.4.H	Pressurizer Power Operated Relief Valve (PORV) — Backup Nitrogen System	10 CFR 50.59
3.7.A	Shock Suppressors (Snubbers)	10 CFR 50.59
3.7.B	Explosive Gas Monitoring	10 CFR 50.59
3.7.D	Cable Tunnel Ventilation Fan	10 CFR 50.59
3.7.E	City Water Supply	10 CFR 50.59
3.7.F	Post Accident Containment Venting System	10 CFR 50.59

Table 1.5-1
Page 3 of 3

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3.9.C	Fuel Storage and Operations With Irradiated Fuel in the Spent Fuel Pit	10 CFR 50.59
3.9.D	Refueling Operations in the Spent Fuel Storage Area	10 CFR 50.59
5.1	Responsibilities	10CFR50.59
5.2	Technical Requirements Manual Update and Bases Control	10CFR50.59
5.3	Procedures	10 CFR 50.59
5.4	Reporting Requirements	10 CFR 50.59
5.5	Programs	10 CFR 50.59
5.6	Record Retention	10 CFR 50.59

3.0 TRO APPLICABILITY

TRO 3.0.D (continued)
3.0 TECHNICAL REQUIREMENTS FOR OPERATION (TRO) APPLICABILITY

TRO 3.0.A

TROs shall be met during the MODES or other specified conditions in the Applicability, except as provided in TRO 3.0.B.

TRO 3.0.B

Upon discovery of a failure to meet a TRO, the Required Actions of the associated Conditions shall be met, except as provided in TRO 3.0.E.

If the TRO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.

TRO 3.0.C

When a TRO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, action shall be initiated within 1 hour to:

a. Implement appropriate compensatory actions as needed;

b. Verify that the plant is not in an unanalyzed condition;

c. Verify that a required safety function is not compromised by the inoperabilities; and

d. Within 12 hours, obtain the Operations Manager approval of the compensatory actions and the plan for exiting TRO 3.0.C.

Exceptions to this TRO are stated in the individual TROs.

Where corrective measures are completed that permit operation in accordance with the TRO or ACTIONS, completion of the actions required by TRO 3.0.C is not required.

TRO 3.0.D

When a TRO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimiting period of time;

b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination

3.0 TRO APPLICABILITY

TRO 3.0.D (continued)

of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

c. When an allowance is stated in the individual value, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

TRO 3.0.E Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to TRO 3.0.B for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

3.0 TECHNICAL REQUIREMENTS SURVEILLANCE (TRS) APPLICABILITY

TRS 3.0.A

TRSs shall be met during the MODES or other specified conditions in the Applicability for individual TROs, unless otherwise stated in the TRS. Failure to meet a TRS, whether such failure is experienced during the performance of the TRS or between performances of the TRS, shall be failure to meet the TRO. Failure to perform a TRS within the specified Frequency shall be failure to meet the TRO except as provided in TRS 3.0.C. TRSs do not have to be performed on inoperable equipment or variables outside specified limits.

TRS 3.0.B

The specified Frequency for each TRS is met if the TRS is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as “once,” the above interval extension does not apply.

If a Completion Time requires periodic performance on a “once per . . .” basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this TRS are stated in the individual TRSs.

TRS 3.0.C

If it is discovered that a TRS was not performed within its specified Frequency, then compliance with the requirement to declare the TRO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the TRS. A risk evaluation shall be performed for any TRS delayed greater than 24 hours and the risk impact shall be managed.

If the TRS is not performed within the delay period, the TRO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the TRS is performed within the delay period and the TRS is not met, the TRO must immediately be declared not met, and the applicable Condition(s) must be entered.

3.0 TRS APPLICABILITY

TRS 3.0.D

Entry into a MODE or other specified condition in the Applicability of a TRO shall only be made when the TRO's Surveillances have been met within their specified Frequency, except as provided by TRS 3.0.C. When a TRO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with TRO 3.0.D.

This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

B 3.0 TECHNICAL REQUIREMENTS FOR OPERATION (TRO) APPLICABILITY

BASES

TROs

TRO 3.0.A through TRO 3.0.E establish the general requirements applicable to all TROs in Sections 3.1 through 3.9 and apply at all times, unless otherwise stated.

TRO 3.0.A

TRO 3.0.A establishes the Applicability statement within each individual Requirement as the requirement for when the TRO is required to be met (i.e., when the unit is in the MODES or other specified conditions of the Applicability statement of each Requirement).

TRO 3.0.B

TRO 3.0.B establishes that upon discovery of a failure to meet a TRO, the associated ACTIONS shall be met. The Completion Time of each Required Action for an ACTIONS Condition is applicable from the point in time that an ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of a TRO are not met. This Requirement establishes that:

a. Completion of the Required Actions within the specified Completion Times constitute compliance with a Requirement; and

b. Completion of the Required Actions is not required when a TRO is met within the specified Completion Time, unless otherwise specified.

There are two basic types of Required Actions. The first type of Required Action specifies a time limit in which the TRO must be met. This time limit is the Completion Time to restore an inoperable system or component to OPERABLE status or to restore variables to within specified limits. If this type of Required Action is not completed within the specified Completion Time, a shutdown may be required to place the unit in a MODE or condition in which the Requirement is not applicable. (Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS.) The second type of Required Action specifies the remedial measures that permit continued operation of the unit that is not further restricted by the Completion Time. In this case, compliance with the Required Actions provides an acceptable justification for continued operation.

BASES

TRO 3.0.B (continued)

Completing the Required Actions is not required when a TRO is met or is no longer applicable, unless otherwise stated in the individual Requirement.

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions no longer exist. The individual TRO's ACTIONS specify the Required Actions where this is the case. An example of this is in TRO 3.7.A, "Snubbers."

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of TRSs, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience. Additionally, if intentional entry into ACTIONS would result in redundant equipment being inoperable, alternatives should be used instead. Doing so limits the time both subsystems/trains of a function are inoperable and limits the time conditions exist which may result in TRO 3.0.C being entered. Individual Requirements may specify a time limit for performing a TRS when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which another Requirement becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new Requirement becomes applicable and the ACTIONS Condition(s) are entered.

TRO 3.0.C

TRO 3.0.C establishes the actions that must be implemented when a TRO is not met and:

a. An associated Required Action and Completion Time is not met and no other Condition applies; or

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BASES

TRO 3.0.C (continued)

b. The condition of the unit is not specifically addressed by the associated ACTIONS. This means that no combination of Conditions stated in the ACTIONS can be made that exactly corresponds to the actual condition of the unit. Sometimes, possible combinations of Conditions are such that entering TRO 3.0.C is warranted; in such cases, the ACTIONS specifically state a Condition corresponding to such combinations and also that TRO 3.0.C be entered immediately.

This TRO delineates the time limits for placing the unit in a safe condition when operation cannot be maintained within the limits for safe operation as defined by the TRO and its action. It is not intended to be used as an operational convenience that permits routine voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable.

Upon entering TRO 3.0.C, 1 hour is allowed to initiate action to implement appropriate compensatory actions, to verify the unit is not in an unanalyzed condition, and to verify that a required safety function is not compromised. Within 12 hours, the Operations Manager's approval of the compensatory actions and the plan for exiting TRO 3.0.C must be obtained. The use and interpretation of specific times to complete the actions of TRO 3.0.C are consistent with the discussion of Section 1.3, Completion Times.

The actions required in accordance with TRO 3.0.C may be terminated and TRO 3.0.C exited if any of the following occurs:

a. The TRO is now met;

b. A Condition exists for which the Required Actions have now been performed; or

c. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time TRO 3.0.C is exited.

Exceptions to TRO 3.0.C are addressed in the individual Requirements.

BASES

TRO 3.0.D

TRO 3.0.D establishes limitations on changes in MODES or other specified conditions in the Applicability when a TRO is not met. It allows placing the unit in a MODE or other specified condition stated in that Applicability (e.g., the Applicability desired to be entered) when unit conditions are such that the requirements of the TRO would not be met, in accordance with TRO 3.0.D.a, TRO 3.0.D.b, or TRO 3.0.D.c.

TRO 3.0.D.a allows entry into a LODE or other specified condition in the Applicability with the TRO not met when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. Compliance with Required Actions that permit continued operation for the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change. Therefore, in such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions.

TRO 3.0.D.b allows entry into a MODE or other specified condition in the Applicability with the TRO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.

The risk assessment may use quantitative, qualitative, or blended approaches, and the risk assessment will be conducted using the plant program, procedures, and criteria in place to implement 10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities to be assessed and managed. The risk assessment, for the purpose of TRO 3.0.D(b), must take into account all inoperable Technical Specification equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessment will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.182, “Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants.” Regulatory Guide 1.182 endorses the guidance in Section 11 of NUMARC 93-01, “Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.” These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of

backup success paths or compensatory measures), and determination that the proposed MODE change is acceptable. Consideration should also be given to the probability of completing restoration such that the requirements of the TRO would be met prior to the expiration of ACTIONS Completion Times that would require exiting the Applicability.

TRO 3.0.D.b may be used with single, or multiple systems and components unavailable. NUMARC 93-01 provides guidance relative to consideration of simultaneous unavailability of multiple systems and components.

The results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. The TRO 3.0.D.b risk assessments do not have to be documents.

The Technical Requirements Manual allows continued operation with equipment unavailable in MODE 1 for the duration of the Completion Time. Since this is allowable, and since in general the risk impact in that particular MODE bounds the risk transitioning into and through the applicable MODES or other specified conditions in the Applicability of the TRO, the use of the TRO 3.0.D.b allowance should be generally acceptable as long as the risk is assess and managed as stated above.

TRO 3.0.D.c allows entry into a MODE or other specified condition in the Applicability with the TRO not met based on a Note in the Specification which states TRO 3.0.D.c is applicable. These specific allowances permit entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time and a risk assessment has not been performed. This allowance may apply to all the ACITONS or to a specific Required Action of a Specification. The risk assessments performed to justify the use of TRO 3.4.D.b usually only considers systems and components. For this reason, TRO 3.0.D.c is typically applied to Specifications which describe values and parameters.

The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

The provisions of TRO 3.0.D shall not prevent changes on MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of TRO 3.0.D shall not prevent change on MODES or other specified conditions in the Applicability that results from any unit shutdown. In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability

associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.

Upon entry into a MODE or other specified condition in the Applicability with the TRO not met, TRO 3.0.A and TRO 3.0.B require entry into the applicable Conditions and Required Actions until the Condition is resolved, until the TRO is met, or until the unit is not within the Applicability of the Technical Specification.

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by TRS 3.0.A. Therefore, utilizing TRO 3.0.D is not a violation of TRS 3.0.A or TRS 3.0.D for any surveillances that have not been performed on inoperable equipment. However, TRSs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected TRO.

BASES

TRO 3.0.E

TRO 3.0.E establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Requirement is to provide an exception to TRO 3.0.B (e.g., to not comply with the applicable Required Action(s)) to allow the performance of required testing to demonstrate:

a. The OPERABILITY of the equipment being returned to service; or

b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the required testing to demonstrate OPERABILITY. This Requirement does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the required testing.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of required testing on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of required testing on another channel in the same trip system.

B 3.0 TECHNICAL REQUIREMENTS SURVEILLANCE (TRS) APPLICABILITY

BASES

TRSs

TRS 3.0.A through TRS 3.0.D establish the general requirements applicable to all Requirements in Sections 3.1 through 3.9 and apply at all times, unless otherwise stated.

TRS 3.0.A

TRS 3.0.A establishes the requirement that TRSs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the TROs apply, unless otherwise specified in the individual TRSs. This TRS is to ensure that TRSs are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a TRS within the specified Frequency, in accordance with TRS 3.0.B, constitutes a failure to meet a TRO.

Systems and components are assumed to be OPERABLE when the associated TRSs have been met. Nothing in this TRS, however, is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable, although still meeting the TRSs; or

b. The requirements of the TRS(s) are known not to be met between required TRS performances.

TRSs do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated TRO are not applicable, unless otherwise specified.

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given TRS. In this case, the unplanned event may be credited as fulfilling the performance of the TRS. This allowance includes those TRSs whose performance is normally precluded in a given MODE or other specified condition.

TRSs, including TRSs invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. TRSs have to be met and performed in accordance with TRS 3.0.B, prior to returning equipment to OPERABLE status.

BASES

TRS 3.0.A (continued)

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable TRSs are not failed and their most recent performance is in accordance with TRS 3.0.B. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance testing can be completed.

Some examples of this process are:

a. Auxiliary feedwater (AFW) pump turbine maintenance during refueling that requires testing at steam pressures > 800 psi. However, if other appropriate testing is satisfactorily completed, the AFW System can be considered OPERABLE. This allows startup and other necessary testing to proceed until the plant reaches the steam pressure required to perform the testing.

b. High pressure safety injection (HPI) maintenance during shutdown that requires system functional tests at a specified pressure. Provided other appropriate testing is satisfactorily completed, startup can proceed with HPI considered OPERABLE. This allows operation to reach the specified pressure to complete the necessary post maintenance testing.

TRS 3.0.B

TRS 3.0.B establishes the requirements for meeting the specified Frequency for TRSs and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a “once per . . .” interval.

TRS 3.0.B permits a 25% extension of the interval specified in the Frequency. This extension facilitates TRS scheduling and considers plant operating conditions that may not be suitable for conducting the TRS (e.g., transient conditions or other ongoing TRS or maintenance activities).

BASES

TRS 3.0.B (continued)

The 25% extension does not significantly degrade the reliability that results from performing the TRS at its specified Frequency. This is based on the recognition that the most probable result of any particular TRS being performed is the verification of conformance with the TRSs. The exception to TRS 3.0.B are those TRSs for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual TRSs. The requirements of regulations take precedence over the TRM. The TRM cannot in and of itself extend a test interval specified in the regulations.

As stated in TRS 3.0.B, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per . . ." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular TRS or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner.

The provisions of TRS 3.0.B are not intended to be used repeatedly merely as an operational convenience to extend TRS intervals (other than those consistent with refueling intervals) or periodic Completion Time intervals beyond those specified.

TRS 3.0.C

TRS 3.0.C establishes the flexibility to defer declaring affected equipment inoperable or an affected variable outside the specified limits when a TRS has not been completed within the specified Frequency. A delay period of up to 24 hours or up to the limit of the specified Frequency, whichever is greater, applies from the point in time it is discovered that the TRS has not been performed in accordance with TRS 3.0.B, and not at the time that the specified frequency was not met.

This delay period provides adequate time to complete TRSs that have been missed. This delay period permits the completion of a TRS before complying with Required Actions or other remedial measures that might preclude completion of the TRS.

The basis for this delay period includes consideration of unit conditions, adequate planning, availability of personnel, the time required to perform the TRS, the safety significance of the delay in completing the required TRS, and the recognition that the most probable result of any particular

BASES

TRS 3.0.C (continued)

TRS being performed is the verification of conformance with the requirements. When a TRS with a Frequency based not on time intervals, but upon specified unit conditions or operational situations (e.g., prior to entering MODE 1 after each fueling loading), is discovered not to have been performed when specified, TRS 3.0.C allows the full delay period of up to the specified frequency to perform the TRS. However, since there is not a time interval specified, the missed TRS should be performed at the first reasonable opportunity. TRS 3.0.C provides a time limit for and allowances for, the performance of, TRSs that become applicable as a consequence of MODE changes imposed by Required Actions.

Failure to comply with specified Frequencies for TRSs is expected to be an infrequent occurrence. Use of the delay period established by TRS 3.0.C is a flexibility which is not intended to be used as an operational convenience to extend TRS intervals. While up to 24 hours or the limit of the specified Frequency is provided to perform the missed Surveillance, it is expected that the missed TRS will be performed at the first reasonable opportunity. The determination of the first reasonable opportunity should include consideration of the impact on plant risk (from delaying the TRS as well as any plant configuration changes required or shutting the plant down to perform the TRS) and impact on any analysis assumptions, in addition to unit conditions, planning, availability of personnel, and the time required to perform the TRS. This risk impact should be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance Regulatory Guide 1.182, “Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants.” This Regulatory Guide addresses consideration of temporary and aggregate risk impacts, determination of risk management action thresholds, and risk management action up to and including plant shutdown. The missed Surveillance should be treated as an emergent condition as discussed in the Regulatory Guide. The risk evaluation may use quantitative, qualitative, or blended methods. The degree of depth and rigor of the evaluation should be commensurate with the importance of the component. Missed TRSs for important components should be analyzed quantitatively. If the results of the risk evaluation determine the risk increase is significant this evaluation should be used to determine the safest course of action. All missed TRSs will be placed in the licensee’s Corrective Action Program.

If a TRS is not completed within the allowed delay period, then the equipment is considered inoperable or the variable then is considered outside the specified limits and the Completion Times of the Required Actions for the applicable TRO Conditions begin immediately upon

BASES

TRS 3.0.C (continued)

expiration of the delay period. If a TRS is failed within the delay period, then the equipment is inoperable, or the variable is outside the specified limits and the Completion Times of the Required Actions for the applicable TRO Conditions begin immediately upon the failure of the TRS.

Completion of the TRS within the delay period allowed by this TRS, or within the Completion Time of the ACTIONS, restores compliance with TRS 3.0.A.

TRS 3.0.D

TRS 3.0.D establishes the requirement that all applicable TRSs must be met before entry into a MODE or other specified condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these system and components ensure safe operation of the unit. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

A provision is included to allow entry into a MODE or other specified condition in the Applicability when a TRO is not met due to Surveillance not being met in accordance with TRO 3.0.D.

However, in certain circumstances, failing to meet a TRS will not result in TRS 3.0.D restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated TRS(s) are not required to be performed, per TRS 3.0.A, which states that TRSs do not have to be performed on inoperable equipment. When equipment is inoperable, TRS 3.0.D does not apply to the associated TRS(s) since the requirement for the TRS(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in a TRS 3.0.D restriction to changing MODES or other specified conditions of the Applicability. However, since the TRO is not met in this instance, TRO 3.0.D will govern any restrictions that may (or may not) apply to MODE or other specified condition changes. TRS 3.0.D dose not restrict changing MODES or other specified conditions of the Applicability when a Surveillance has not been performed within the specified Frequency, provided the requirement to declare the TRO not met has been delayed in accordance with TRS 3.0.C.

BASES

TRS 3.0.C (continued)

The provisions of TRS 3.0.D shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of TRS 3.0.D shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown. In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.

The precise requirements for performance of TRSs are specified such that exceptions to TRS 3.0.D are not necessary. The specific time frames and conditions necessary for meeting the TRSs are specified in the Frequency, in the Surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a TRS procedure require entry into the MODE or other specified condition in the Applicability of the associated TRO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the TRO Applicability would have its Frequency specified such that it is not “due” until the specific conditions needed are met. Alternately, the TRS may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been reached. Further discussion of the specific formats of TRSs’ annotation is found in Section 1.4, Frequency.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.A Rod Position Deviation Monitor Alarm

TRO 3.1.A Rod position deviation monitor shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Rod Position deviation monitor inoperable.	A.1 Perform Technical Specification SR 3.1.4.1.	After a load change > 10 % of RTP

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.1.A.1	Perform COT.	31 days

3.1 REACTIVITY CONTROL SYSTEMS

B 3.1.A Rod Position Deviation Monitor Alarm

BASES

No Bases information provided.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.B.1 Boration System — Operating

TRO 3.1.B.1 Two Chemical and Volume Control System flow paths for boric acid injection shall be OPERABLE as follows:

a) One flow path from the Refueling Water Storage Tank (RWST) to the Reactor Coolant System (RCS);

b) One flow path from the boric acid storage system to the RCS that includes:

1) One boric acid transfer pump,

2) Two channels of heat tracing,

3) Minimum specified volume and concentration of boric acid solution above the minimum specified temperature.

c) Two charging pumps, each capable of supporting both the RWST injection flow path and the boric acid storage system injection flow path.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required charging pump inoperable.	A.1 Restore required charging pump to OPERABLE status.	24 hours
B. Boric acid storage system injection flow path inoperable for reasons other than heat tracing.	B.1 Restore boric acid storage system injection flow path to OPERABLE status.	48 hours
C. One channel of heat tracing inoperable.	C.1 Restore heat tracing channel to OPERABLE status.	7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two channels of heat tracing inoperable.	D.1 Verify boric acid storage system injection flow path is clear of blockage. AND D.2 Restore at least one channel of heat tracing to OPERABLE status.	Immediately 48 hours
E. Required Actions and associated completion times of Condition A, B, C, or D not met. OR Two required charging pumps inoperable. OR RWST injection flow path inoperable.	E.1 Enter TRO 3.0.C.	Immediately
F. Instrumentation inoperable for charging flow, boric acid tank level, volume control tank level, or boric acid make-up flow.	F.1 Initiate action to restore to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.1.B.1.1	Verify boric acid storage tank solution within limits as follows: a) Boric acid solution volume is ≥ 6000 gallons; b) Boric acid solution temperature is ≥ 145°F; and c) Boric acid solution concentration is ≥ 11.5 weight percent (20,000 ppm and ≤ 13.0 weight percent (22,500 ppm).	4 days
TRS 3.1.B.1.2	Perform CHANNEL CHECK of the Boric acid tank level indicator.	7 days
TRS 3.1.B.1.3	Perform CHANNEL CALIBRATION: a) Boric acid tank level indicator; b) Volume control tank level; and c) Charging pump flow indicators, and d) Boric Acid Make-up Flow Channel.	24 months

3.1 REACTIVITY CONTROL SYSTEMS

B 3.1.B.1 Boration System — Operating

BASES

The boric acid storage system shall contain a minimum of 6000 gallons of 11 ½% to 13% by weight (20,000 to 22,500 ppm of boron) boric acid solution at a temperature of 145°F.

The Chemical and Volume Control System provides control of the Reactor Coolant System boron inventory. This is normally accomplished by using any one of the three charging pumps in series with either one of the two boric acid transfer pumps. An alternate method of boration will be to use the charging pumps taking suction directly from the refueling water storage tank. The third method will be to depressurize the RCS and operate the safety injection pumps.

There are three sources of borated water available for injection through three different paths:

1. The boric acid transfer pumps can deliver the contents of the boric acid storage system to the charging pumps.

2. The charging pumps can take suction from the refueling water storage tank (2000 ppm boron solution).

3. The safety injection pumps can take suction from the refueling water storage tank. However, use of the SI pumps for boration requires that the RCS is depressurized. Requirements for ECCS are established in Technical Specification 3.5 and are not addressed in this TRO.

The quantity of boric acid in storage from either the boric acid storage system or the refueling water storage tank is sufficient to borate the reactor coolant in order to reach MODE 5 at any time during core life.

Approximately 5700 gallons of the 11 ½% to 13% by weight (20,000 ppm to 22,500 ppm of boron) of boric acid are required to meet MODE 5 conditions.

Thus a minimum of 6000 gallons in the boric acid storage system is specified. An upper concentration limit of 13% (22,500 ppm of boron) boric acid in the boric acid storage system is specified to maintain solution solubility at the specified low temperature limit of 145°F. One of two channels of heat tracing is sufficient to maintain the specified low temperature limit. Since both channels out of service could result in boron precipitation, it is necessary to show that the required flow path is clear of blockage following operation in this condition.

REFERENCES 1. UFSAR Section 9.2

3.1 REACTIVITY CONTROL SYSTEMS

3.1.B.2 Boration System — Shutdown

TRO 3.1.B.2 One of the following Chemical and Volume Control System flow paths for boric acid injection shall be OPERABLE as follows:

a) One flow path from the Refueling Water Storage Tank (RWST) to the Reactor Coolant System (RCS) that includes:

1) One charging pump, and

2) RWST boric acid solution volume, concentration and temperature equivalent to the requirements of Technical Specification 3.5.4.

b) One flow path from the boric acid storage system to the RCS that includes:

1) One boric acid transfer pump,

2) Two channels of heat tracing,

3) Minimum specified volume and concentration of boric acid solution above the minimum specified temperature, and

4) One charging pump.

- NOTE -

A charging pump is considered OPERABLE when injection capability is blocked to meet requirements of LCO 3.4.12, “Low Temperature Overpressure Protection (LTOP),'' if capable of being manually realigned (remotely or locally) to the injection mode of operation and not otherwise inoperable. This allows injection capability to be blocked in MODE 4 and 5 if needed to satisfy the requirements of LCO 3.4.12.

APPLICABILITY: MODES 3, 4, 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
--- **- NOTE -** Only applicable if boric acid storage system injection flow path is required to be OPERABLE. --- A. One channel of heat tracing inoperable.	A.1 Restore heat tracing channel to OPERABLE status.	7 days
--- **- NOTE -** Only applicable if boric acid storage system injection flow path is required to be OPERABLE. --- B. Both channels of heat tracing inoperable.	B.1 Verify boric acid storage system injection flow path is clear of blockage. AND B.2 Restore at least one heat tracing channel to OPERABLE status.	Immediately 48 hours
C. Both boric acid injection flow paths inoperable.	C.1 Enter TRO 3.0.C.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
	--- **- NOTE -** Only required if boric acid storage system injection flow path is required to be OPERABLE. ---	
TRS 3.1.B.2.1	Verify boric acid storage tank solution within limits specified in TRS 3.1.B.1.1.	4 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
	--- **- NOTE -** Only required if RWST injection flow path is required to be OPERABLE in MODES 5 and 6. ---	
TRS 3.1.B.2.2	Verify RWST is within limits specified in Technical Specification SR 3.5.4.1, SR 3.5.4.2, and SR 3.5.4.3.	As specified in applicable SRs

3.1 REACTIVITY CONTROL SYSTEMS

B 3.1.B.2 Boration System — Shutdown

BASES

The Chemical and Volume Control System provides control of the Reactor Coolant System boron inventory. This is normally accomplished by using any one of the three charging pumps in series with either one of the two boric acid transfer pumps. An alternate method of boration will be to use the charging pumps taking suction directly from the refueling water storage tank. The third method will be to depressurize the RCS and operate the safety injection pumps.

There are three sources of borated water available for injection through three different paths:

1. The boric acid transfer pumps can deliver the contents of the boric acid storage system to the charging pumps.

2. The charging pumps can take suction from the refueling water storage tank (2000 ppm boron solution).

3. The safety injection pumps can take suction from the refueling water storage tank. However, use of the SI pumps for boration requires that the RCS is depressurized. Requirements for ECCS are established in Technical Specification 3.5 and are not addressed in this TRO.

The quantity of boric acid in storage from either the boric acid storage system or the refueling water storage tank is sufficient to borate the reactor coolant in order to reach MODE 5 at any time during core life.

Approximately 5700 gallons of the 11 ½% to 13% by weight (20,000 ppm to 22,500 ppm of boron) of boric acid are required to meet MODE 5 conditions.

Thus, a minimum of 6000 gallons in the boric acid storage system is specified. An upper concentration limit of 13% (22,500 ppm of boron) boric acid in the boric acid storage system is specified to maintain solution solubility at the specified low temperature limit of 145°F. One of two channels of heat tracing is sufficient to maintain the specified low temperature limit. Since both channels out of service could result in boron precipitation, it is necessary to show that the required flow path is clear of blockage following operation in this condition.

REFERENCES 1. UFSAR Section 9.2

3.1 REACTIVITY CONTROL SYSTEMS

3.1.C Control Rod Protection System

TRO 3.1.C Three channels of Control Rod Protection shall be OPERABLE.

APPLICABILITY: When control rods are positioned in core locations containing LOPAR fuel and reactor trip breakers are closed during RCS cooldown.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Place channel in trip.	Prior to initiation of any planned RCS cooldown to less than 381°F
B. Two or more channels inoperable.	B.1 Manually open reactor trip breakers prior to T_{cold} decreasing below 381°F, during RCS cooldown.	Prior to T_{cold} decreasing below 381°F, during RCS cooldown.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.1.C.1	Perform COT.	31 days prior to entering a condition in which the Control Rod Protection System is required to be OPERABLE
TRS 3.1.C.2	Perform CHANNEL CALIBRATION.	24 months

3.1 REACTIVITY CONTROL SYSTEMS

B 3.1.C Control Rod Protection System

BASES

To avoid mechanical interference due to thermal contraction between the fuel and the control rods, an automatic backup to manual tripping of the control rods is provided. Prior to T_{cold} decreasing below 381°F during RCS cooldown, the Control Rod Protection System will open the reactor trip breakers which unlatches the control rod drive shafts from the CRDMs.

Two channels of the Control Rod Protection System are needed to trip the system.

Note that IP2 does not currently use LOPAR fuel. However, the control rod protection trip requirement should be met for conservatism.

3.2 POWER DISTRIBUTION LIMITS

3.2.A Quadrant Power Tilt Deviation Alarm

TRO 3.2.A Both Quadrant power tilt monitors shall be OPERABLE with the tilt deviation alarm set to annunciate whenever the excore tilt ratio exceeds 1.02.

APPLICABILITY: MODE 1 with THERMAL POWER >50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Either quadrant power tilt monitor inoperable.	A.1 Verify QPTR is within limit by calculation.	Once per 12 hours AND After load change >10% of rated power
	OR	OR
	----------NOTE---------- This action only applies with a power range neutron flux channel inoperable at >75% Reactor Thermal Power ----------	
	A.2 Perform TS surveillance 3.2.4.2	Per TS SR 3.2.4.2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
None	NA

3.2 POWER DISTRIBUTION LIMITS

B 3.2.A Quadrant Power Tilt Deviation Alarm

BASES

This TRM is relocated from current TS 3.10.10. The DOC making the change indicated that the ITS LCO 3.2.4 continues to maintain QPTR limits above 50% RTP and the relocation is acceptable because a prompt change in quadrant power tilt (e.g., from a dropped rod) results in other indications of abnormality, and the current TS SR 3.2.4.1 is adequate to determine any relatively slow changes in QPTR. This TRM increases the frequency for verifying QPTR when a monitor is inoperable. The quadrant tilt power deviation alarm is used to indicate a sudden or unexpected change from the radial power distribution mentioned above. The two percent tilt alarm setpoint represents a minimum practical value consistent with instrumentation errors and operating procedures. This asymmetry level is sufficient to detect significant misalignment of control rods. Misalignment of control rods is considered to be the most likely cause of radial power asymmetry. The requirement for verifying rod position once per shift (TS SR 3.1.4.1) is imposed to preclude rod misalignment which would cause a tilt condition of less than the 2% alarm level.

Verification of QPTR involves logging individual upper and lower excore detector calibrated outputs for QPTR calculation.

With one or more power tilt monitors inoperable the frequency of manual tilt calculations is increased to 12 hours. With an NIS power range channel inoperable, tilt monitoring calculations are not practical . Performing SR 3.2.4.2 at a Frequency of 24 hours provides an accurate alternative means for ensuring that any tilt remains within its limits.

3.3 INSTRUMENTATION

3.3.A Meteorological Monitoring Instrumentation

TRO 3.3.A The meteorological monitoring instrumentation in Table 3.3.A-1 shall be OPERABLE with indication of the tabulated parameters available in the control room.

APPLICABILITY: At all times.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the required meteorological monitoring channels inoperable.	A.1 Restore to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Prepare a corrective action report outlining the cause of the malfunction(s) and the plans for restoring the channel(s) to OPERABLE status.	10 days

SURVEILLANCE REQUIREMENTS

- NOTE -

TRS 3.3.A.1 and TRS 3.3.A.2 apply to each Meteorological Monitoring Instrumentation Function in Table 3.3.A-1.

	SURVEILLANCE	FREQUENCY
TRS 3.3.A.1	Perform CHANNEL CHECK.	24 hours
TRS 3.3.A.2	Perform CHANNEL CALIBRATION.	184 days

Table 3.3.A-1 (page 1 of 1)
Meteorological Monitoring Instrumentation

INSTRUMENT	MINIMUM REQUIRED OPERABLE	INSTRUMENT ACCURACY
1. Wind Speed		
a. Nominal Elevation 10m[(a)]	1	± 0.5 mph[(b)]
b. Nominal Elevation 60m	1	± 0.5 mph[(b)]
c. Nominal Elevation 122m	1	± 0.5 mph[(b)]
2. Wind Direction		
a. Nominal Elevation 10m	1	± 5°
b. Nominal Elevation 60m	1	± 5°
c. Nominal Elevation 122m	1	± 5°
3. Air Temperature Differential (Delta T)		
a. Nominal Elevation 60 – 10m	1	± 0.1°C
b. Nominal Elevation 122 – 10m	1	± 0.1°C

(a) 10 m as measured by the primary or backup meteorological tower.

(b) Starting speed of anemometer shall be < 1 mph.

3.3 INSTRUMENTATION

B 3.3.A Meteorological Monitoring Instrumentation

BASES

Operability of the meteorological monitoring system instrumentation ensures that sufficient meteorological data at the site is available for estimating potential radiation doses to the public as a result of routine or accidental releases of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, Rev. 0.

This specification ensures the OPERABILITY of the meteorological monitoring instrumentation and the collection of meteorological data at the plant site. This data is used for estimating potential radiation doses to the public resulting from routine or accidental releases of radioactive materials to the atmosphere. A meteorological data collection program, as described in this specification, is necessary to meet the requirements of 10 CFR 50.36.a (a) (2), Appendix E to 10 CFR 50 and 10 CFR 51.

Meteorological data shall be summarized and reported as required for inclusion in the Radioactive Effluent Release Report pursuant to Technical Specification 5.6.3.

3.3 INSTRUMENTATION

3.3.B RHR Flow Monitoring Instrumentation

TRO 3.3.B Residual Heat Removal (RHR) pump flow transmitters shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A One or more RHR flow transmitters inoperable.	A.1 Verify the Technical Specification SRs that may be performed using the RHR flow transmitters are met. AND	Immediately
	A.2 Initiate action to restore RHR flow transmitters to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.B.1	Perform CHANNEL CALIBRATION on RHR pump flow transmitter.	24 months

3.3 INSTRUMENTATION

B 3.3.B RHR Flow Monitoring Instrumentation

BASES

RHR flow transmitters are classified as Category 2, Type D, in accordance with Regulatory Guide 1.97, Post Accident Monitoring Instrumentation. Although RG 1.97 instruments classified as Category 2, Type D, are not governed by Technical Specification 3.3.3, these instruments need to be restored to service in a timely manner commensurate with their role in post accident monitoring (FT-956A, B, C, & D and FT-640).

RHR flow transmitters may be used to meet the following Technical Specification SRs:

SR 3.4.6.1 in LCO 3.4.6, RCS Loops - MODE 4;
SR 3.4.7.1 in LCO 3.4.7 RCS Loops - MODE 5, Loops Filled;
SR 3.4.8.1 in LCO 3.4.8 RCS Loops - MODE 5, Loops Not Filled;
SR 3.9.4.1 in LCO 3.9.4 RHR and Coolant Circulation - High Water Level; and
SR 3.9.5.1 in LCO 3.9.5 RHR and Coolant Circulation - Low Water Level.

If the RHR flow transmitter associated with this SR is not OPERABLE, these SRs must be performed and met using an alternate method.

3.3 INSTRUMENTATION

3.3.C Service Water (SW) Inlet Temperature Monitoring and Instrumentation

TRO 3.3.C Service water inlet temperature monitoring instrumentation shall be OPERABLE; and

Accelerated surveillance monitoring of Ultimate Heat Sink (UHS) temperature shall be performed when average SW inlet temperature is ≥ 80°F.

APPLICABILITY: MODES 1, 2, and 3; and when the average intake water temperature is ≥ 80°F.

- NOTE -

The SW inlet water temperature shall be the average of the temperatures taken over a 24 hour period.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. All SW inlet temperature monitoring instrumentation inoperable.	A.1 Restore to OPERABLE status.	Within time interval to meet TRS 3.3.C.1 or SR 3.7.9.1.
B. Required Actions and associated Completion Times of Condition A.	B.1 Perform Technical Specification SR 3.7.9.1, Verify UHS temperature, and TRS 3.3.C.1 using a calibrated portable instrument.	Whenever TS SR 3.7.9.1 and TRS 3.3.C.1 is performed

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. TRS 3.3.C.1 not performed or not met.	C.1	Verify Technical Specification SR 3.7.9.1 is met.	Immediately
	AND		
	C.2	Initiate corrective action to ensure that accelerated surveillance monitoring of UHS temperature is performed as required.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.C.1	Verify current SW inlet temperature is less than 95°F per Technical Specification SR 3.7.9.1 using SW inlet temperature monitoring instrumentation.	1 hour when average SW inlet temperature is > 90°F. AND 4 hours when average SW inlet temperature is > 80°F and ≤ 90°F.
TRS 3.3.C.2	Perform CHANNEL OPERATIONAL TEST.	12 months
TRS 3.3.C.3	Perform CHANNEL CALIBRATION.	24 months

3.3 INSTRUMENTATION

B 3.3.C Service Water (SW) Inlet Temperature Monitoring and Instrumentation

BASES

The service water inlet temperature monitoring instrumentation shall measure the Hudson River water temperature at the Indian Point Unit No. 2 intake structure.

Service water inlet temperature monitoring instrumentation and accelerated surveillance monitoring of Ultimate Heat Sink (UHS) temperature have been established to ensure that the requirements of Technical Specification 3.7.9, Ultimate Heat Sink, and specifically SR 3.7.9.1, are met. Therefore, the worst consequences of failure to meet TRO 3.3.C is a failure to meet Technical Specification 3.7.9.

SOP 24.1.1, Service Water Hot Weather Operations, identifies the installed instrumentation that may be used to satisfy TRO 3.3.C requirements for service water inlet temperature monitoring instrumentation and duplicates the requirements in this TRO. SOP 24.1.1 also provides specific requirements for the use of calibrated portable instrumentation needed to meet this TRO if all installed temperature monitoring instrumentation is inoperable.

Note that the requirements for SW inlet temperature monitoring instrumentation and accelerated surveillance monitoring of UHS temperature are based on the average of the temperatures recorded over the previous 24 hours. However, the acceptance criteria for Technical Specification 3.7.9, SR 3.7.9.1, is the current temperature reading.

3.3 INSTRUMENTATION

3.3.D Spent Fuel Storage Area Radiation Monitoring

TRO 3.3.D Radiation levels in the spent fuel storage area shall be monitored continuously.

APPLICABILITY: When irradiated fuel movement is taking place in the spent fuel storage area.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Spent fuel storage area radiation monitor inoperable.	A.1 ---------- **- NOTE -** Suspension of fuel movement shall not preclude completion of movement to a safe position. ---------- Stop irradiated fuel movement in the spent fuel storage area. OR	Immediately
	A.2 Establish alternate radiation monitoring capability in the spent fuel storage area.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.D.1	Perform CHANNEL CHECK.	24 hours
TRS 3.3.D.2	Perform COT.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRS 3.3.D.3	Perform CHANNEL CALIBRATION.	24 months

3.3 INSTRUMENTATION

B 3.3.D Spent Fuel Storage Area Radiation Monitoring

BASES

Radiation levels in the spent fuel storage area are monitored by radiation monitor R-5.

3.3 INSTRUMENTATION

3.3.E Containment Area Radiation Monitoring

TRO 3.3.E Radiation levels in containment shall be monitored continuously.

APPLICABILITY: In MODE 6, with any of the following:
1) the reactor vessel head being moved
2) the upper internals being moved
3) loading and unloading fuel from the reactor
4) heavy loads > 2300 lbs (except for installed crane systems) are being moved over the reactor with the reactor vessel head removed.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Containment area radiation monitoring inoperable.	A.1	---------- **- NOTE -** Suspension of movement shall not preclude completion of movement to a safe position. ---------- Stop moving equipment listed in the Applicability. <u>OR</u>	Immediately
	A.2	Establish alternate radiation monitoring capability in containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.E.1	Perform CHANNEL CHECK of area radiation monitoring.	24 hours

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRS 3.3.E.2	Perform COT of area radiation monitoring.	31 days
TRS 3.3.E.3	Perform CHANNEL CALIBRATION of area radiation monitoring.	24 months

3.3 INSTRUMENTATION

B 3.3.E Containment Area Radiation Monitoring

BASES

Containment Area Radiation monitors include the following monitors:

R-2: Containment Area

R-7: Incore Instrumentation Area in Containment

REFERENCES 1. UFSAR Table 11.2-7, “Radiation Monitoring Channel Data”

3.3 INSTRUMENTATION

3.3.F Axial Flux Difference Alarm

TRO 3.3.F Axial Flux Difference Alarms shall be OPERABLE.

APPLICABILITY: MODE 1 with THERMAL POWER > 15% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Axial Flux Difference Alarm(s) inoperable.	A.1 Perform Technical Specification SR 3.2.3.1.	Once per hour for 24 hours AND Every 30 minutes thereafter

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
None	NA

3.3 INSTRUMENTATION

B 3.3.F Axial Flux Difference Alarm

BASES

Axial Flux Difference (AFD) requirements are governed by Technical Specification 3.2.3. Technical Specification Surveillance 3.2.3.1 verifies that the AFD as indicated by the NIS excore channels is within the target band. The Surveillance Frequency of 7 days is adequate because the AFD is controlled by the operator and monitored by the process computer. More frequent monitoring is necessary when alarms provided by the process computer are not available.

3.3 INSTRUMENTATION

3.3.G Post Accident Monitoring (PAM) Instrumentation

TRO 3.3.G PAM Instrumentation for each Function in Table 3.3.G-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

- NOTE -

1. Separate Condition entry is allowed for each function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --- **- NOTE -** Only applicable to Functions 1, 2, 3, 4, and 5. --- One or more Function(s) with required channels inoperable.	A.1 Restore required channel to OPERABLE status.	7 days
B. --- **- NOTE -** Only applicable to Functions 1, 2, and 3. --- Required Action and associated Completion Time not met.	B.1 Enter TRO 3.0.C.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------- **- NOTE -** Only applicable to Functions 4 and 5. ---------- Required Action and associated Completion Time not met.	C.1 Initiate alternative method of monitoring the appropriate parameter(s). AND C.2 Prepare a Corrective Action Program report.	Immediately 14 days

SURVEILLANCE REQUIREMENTS

- NOTE -

Refer to Table 3.3.G-1 to determine which TRSs apply for each Post Accident Monitoring Instrumentation Function.

SURVEILLANCE		FREQUENCY
TRS 3.3.G.1	Perform CHANNEL CHECK.	12 hours
TRS 3.3.G.2	Perform CHANNEL CHECK.	31 days
TRS 3.3.G.3	Perform CHANNEL CALIBRATION.	24 months

Table 3.3.G-1 (page 1 of 1)
Post Accident Monitoring

	FUNCTION	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS
1	PORV Position Indicator (Limit Switch)	1 / valve[(a)(b)]	TRS 3.3.G.2 TRS 3.3.G.3
2	PORV Block Valve Position Indicator (Limit Switch)	1 / valve[(a)(c)]	TRS 3.3.G.2 TRS 3.3.G.3
3	Safety Valve Position Indicator (Acoustic Monitor)	1 / valve[(a)]	TRS 3.3.G.2 TRS 3.3.G.3
4	Plant Vent Noble Gas Effluent Monitor (R-27)	1[(a)]	TRS 3.3.G.1 TRS 3.3.G.3
5	Main Steam Line Radiation Monitor (R-28, R-29, R-30, R-31)	1 / steam line[(a)]	TRS 3.3.G.1 TRS 3.3.G.3

(a) Encompass the entire channel from sensor to display where either an indicator, recorder, or alarm is acceptable.

(b) Except at times when the associated block valve is closed and de-energized. Acoustic monitoring of the PORV position (header discharge) can be used as a substitute from the PORV Position Indicator – Limit Switches instrument.

(c) Except at times when the block valve is closed and de-energized.

3.3 INSTRUMENTATION

B 3.3.G Post Accident Monitoring (PAM) Instrumentation

BASES

No bases information is provided.

3.3 INSTRUMENTATION

3.3.H Safety Injection (SI) Accumulator Instrumentation

TRO 3.3.H Safety Injection accumulator level and pressure instrumentation shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS pressure > 1000 psig.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more accumulator level or pressure instrumentation channels inoperable.	A.1	Verify Technical Specification SR 3.5.1.2 and SR 3.5.1.3 are met for the affected accumulator.	Immediately
	AND		
	A.2	Establish schedule for more frequent performance of SR 3.5.1.2 and SR 3.5.1.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.H.1	Perform CHANNEL CALIBRATION on accumulator level.	24 months
TRS 3.3.H.2	Perform CHANNEL CALIBRATION on accumulator pressure.	24 months

3.3 INSTRUMENTATION

B 3.3.H Safety Injection (SI) Accumulator Instrumentation

BASES

The accumulator level and pressure instruments provide indication and alarm that ensures Technical Specification SR 3.5.1.2 and SR 3.5.1.3 are met. If accumulator level or pressure instruments are not OPERABLE, ensure SR 3.5.1.2 and SR 3.5.1.3 are being met for the affected accumulator and establish a schedule for more frequent verifications that SR 3.5.1.2 and SR 3.5.1.3 are being met. The 12 hour Frequency for these SRs is based on the availability of control room indication and alarms.

3.3 INSTRUMENTATION

3.3.I Process Radiation Monitoring

TRO 3.3.I Process radiation monitors shall be OPERABLE.

APPLICABILITY: When the associated plant system is in operation.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more process radiation monitors inoperable.	A.1 Initiate action to establish alternate method for monitoring affected plant process. AND A.2 Initiate action to restore to OPERABLE status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.I.1	Perform CHANNEL CHECK.	24 hours
TRS 3.3.I.2	Perform COT.	31 days
TRS 3.3.I.3	Perform CHANNEL CALIBRATION.	24 months

3.3 INSTRUMENTATION

B 3.3.I Process Radiation Monitoring

BASES

Process radiation monitoring includes the following monitors for the associated system:

R-47: Component Cooling Radiation

R-59: House Service Boiler Condensate

R-61A, R-61B, R-61C, R-61D: Main Steam Line Nitrogen 16

3.3 INSTRUMENTATION

3.3.J Area Radiation Monitoring

TRO 3.3.J Area radiation monitors shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more radiation monitors inoperable.	A.1 Establish compensatory measures to ensure radiation protection for personnel in the area of the inoperable monitor. AND A.2 Initiate action to restore to OPERABLE status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.3.J.1	Perform CHANNEL CHECK of area radiation monitoring.	24 hours
TRS 3.3.J.2	Perform COT of area radiation monitoring.	31 days
TRS 3.3.J.3	Perform CHANNEL CALIBRATION of area radiation monitoring.	24 months

3.3 INSTRUMENTATION

B 3.3.J Area Radiation Monitoring

BASES

Area Radiation monitoring includes the following monitors for the associated system:

R-1: Control Room

R-4: Charging Pump Room/PAB Cooridor

R-6: Sampling Room

R-5987, 98’ Elevation Primary Auxiliary Building

REFERENCES 1. UFSAR Table 11.2-7, “Radiation Monitoring Channel Data”

3.3 INSTRUMENTATION

3.3.K Toxic Gas Monitoring Instrumentation

TRO 3.3.K The toxic gas monitoring instruments with the number of required channels for each function in Table 3.3.K-1 shall be OPERABLE.

APPLICABILITY: AT ALL TIMES

----------NOTE----------

1. Separate Condition entries are allowed only if one or more installed channels capable of detecting chlorine and anhydrous ammonia, with control room alarm, are OPERABLE.
2. TRO 3.0.C is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required channel for a monitored gas inoperable.	A.1 Restore the inoperable channel to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate and maintain operation of the Control Room Ventilation System in the recirculation mode of operation.	6 hours
C. Two required channels for a monitored gas inoperable.	C.1 Initiate and maintain operation of the Control Room Ventilation System in the recirculation mode of operation.	1 hour

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.3.K.1	Perform a CHANNEL CHECK.	24 hours
TRS 3.3.K.2	Perform a CHANNEL OPERATIONAL TEST.	31 days
TRS 3.3.K.3	Perform a CHANNEL CALIBRATION.	92 days

TABLE 3.3.K-1			
Toxic Gas Monitoring System			
MONITORED GAS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENT	ALARM
AMMONIA	2	TRS 3.3.K.1 TRS 3.3.K.2 TRS 3.3.K.3	≤50 PPM
CHLORINE	2	TRS 3.3.K.1 TRS 3.3.K.2 TRS 3.3.K.3	≤ 5 PPM

3.3 INSTRUMENTATION

B 3.3.K Toxic Gas Monitoring Instrumentation

BASES

The control room ventilation system is equipped with a toxic gas detection system consisting of redundant monitors capable of detecting anhydrous ammonia and chlorine. The toxic gas detection system is designed to isolate the control room from outside air prior to the concentrations of these gases reaching IDLH (Immediately Dangerous to Life and Health) levels. Selection of the gases to be monitored are based on the results described in Reference 1, and the setpoints established for the monitors are based on References 2 and 3. The operability of the toxic gas detection system, including the control room alarms, provides assurance that the control room operators will have adequate time to take protective action in the event of an accidental toxic gas release. There is a single common alarm for all four toxic gas monitors (chlorine and ammonia times 2 channels). All toxic gas monitors on both trains feed this common alarm. Once an alarm is received from a monitor or a flowmeter, the alarm will be illuminated with no reflash capability. The alarm will not be available to detect another condition until the initial condition is cleared and therefore all toxic gas channels are inoperable. Separate entry is allowed only for conditions that do not seal in the alarm or affect operability of the alarm. The surveillance frequencies for the Channel Check and the Channel Operational Test are the original frequencies previously contained in Technical Specifications (Amendment No. 102). The Calibration frequency is based on vendor recommendation.

ACTIONS

B.1, C.1

The Actions to place the Control Room Ventilation System in the recirculation mode (Mode 3) compensate for conditions where one channel is not restored in a timely manner or when both channels become inoperable. If at least one channel of detection is not restored, there is a potential for a single failure to render the second channel inoperable, and thus, it cannot be ensured that toxic gas detection will occur. Therefore, these actions will ensure the control room ventilation system is in the recirculation mode of operation for a toxic gas event.

REFERENCES:

1. Indian Point Unit 2 Habitability Study dated June 10, 1991
2. Safety Evaluation 00-766-TM, Revision 0, “Toxic Gas Monitor System SetPoint and Surveillance frequency Changes”
3. Calculation FCX-00-353, Revision 01, “Analysis of Chemical Concentrations in the CCR Following Offsite Chemical Releases”
4. FSAR 7.2.1.1
5. FSAR 9.9.2

3.3 INSTRUMENTATION

3.3.L Deleted

3.3 INSTRUMENTATION

B 3.3.L Deleted

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.A.1 Reactor Coolant System (RCS) Chemistry T_{avg} > 250°F

TRO 3.4.A.1 Concentration of contaminants in the reactor shall not exceed the limits of Table 3.4.A.1-1.

APPLICABILITY: MODES 1, 2, 3, and
MODE 4 when T_{avg} is > 250°F.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RCS Chemistry normal steady-state operating limits exceeded.	A.1	Initiate actions to restore RCS chemistry to within normal steady-state operating limits.	Immediately
	AND		
	A.2	Restore RCS chemistry to within normal steady state limits.	24 hours
B. RCS chemistry transient limits exceeded. OR Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 2.	24 hours
	AND		
	B.2	Reduce RCS T_{avg} to ≤ 250°F.	30 hours
	AND		
	B.3	Perform safety review if RCS chemistry transient limits were exceeded.	Prior to entering MODE 2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.4.A.1.1	Verify the RCS chemistry parameters are within the limits specified in Table 3.4.A.1-1.	7 days

Table 3.4.A.1-1 (page 1 of 1)
Reactor Coolant System Chemistry T_{avg} > 250°F

	CONTAMINANT	NORMAL TEMPERATURE STEADY STATE LIMIT (ppm)	NORMAL TEMPERATURE TRANSIENT LIMIT (ppm)
1.	Oxygen	0.10	1.00
2.	Chloride	0.15	1.50
3.	Fluoride	0.15	1.50

3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.A.1 Reactor Coolant System (RCS) Chemistry T_{avg} > 250°F

BASES

By maintaining the oxygen, chloride and fluoride concentrations in the reactor coolant below the steady state limits specified, the integrity of the reactor coolant system is assured under all operating conditions.

If these steady state limits are exceeded, measures can be taken to correct the condition (e.g., replacement of ion exchange resin or adjustment of the hydrogen concentration in the volume control tank) (Ref. 1) because of the time dependent nature of any adverse effects arising from oxygen, chloride, and fluoride concentration in excess of the limits, it is unnecessary to shut down immediately since the condition can be corrected. Thus the period of 24 hours for corrective action to restore concentrations within the steady state limits has been established. If the corrective action has not been effective at the end of the 24-hour period, then the reactor will be brought to < 250°F and the corrective action will continue.

Whenever RCS chemistry limits are exceeded, actions to identify the cause and prevent recurrence are initiated.

The effects of contaminants in the reactor coolant are temperature dependent. Therefore, less restrictive RCS chemistry limits apply when RCS temperature is less than 250°F. These limits for operation at reduced temperatures are specified in TRM 3.4.A.2.

REFERENCES 1. UFSAR Section 9.2

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.A.2 Reactor Coolant System (RCS) Chemistry $T_{avg} \leq 250°F$

TRO 3.4.A.2 Concentration of contaminants in the reactor shall not exceed the limits of Table 3.4.A.2-1.

APPLICABILITY: MODE 4 when T_{avg} is $\leq 250°F$,
MODES 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RCS chemistry reduced temperature steady state limits exceeded.	A.1	Initiate actions to restore RCS chemistry to within reduced temperature steady state limits.	Immediately
	AND		
	A.2	Restore RCS chemistry to within reduced temperature steady state limits.	48 hours
B. Required Action and associated Completion Time of Condition A not met. OR RCS chemistry reduced temperature transient limits exceeded.	B.1	Be in MODE 5.	6 hours
	AND		
	B.2	Perform safety review if RCS chemistry reduced temperature transient limits were exceeded.	Prior to increasing Tavg to $> 250°F$

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.4.A.2.1	Verify RCS chemistry parameters are within the limits specified in Table 3.4.A.2-1.	7 days

Table 3.4.A.2-1 (page 1 of 1)
Reactor Coolant System Chemistry $T_{avg} \leq 250°F$

	CONTAMINANT	REDUCED TEMPERATURE STEADY STATE LIMIT (ppm)	REDUCED TEMPERATURE TRANSIENT LIMIT (ppm)
1.	Oxygen	Saturated	Saturated
2.	Chloride	0.15	1.50
3.	Fluoride	0.15	1.50

3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.A.2 Reactor Coolant System (RCS) Chemistry $T_{avg} \leq 250°F$

BASES

By maintaining the oxygen, chloride and fluoride concentrations in the reactor coolant below the limits as specified, the integrity of the reactor coolant system is assured under all operating conditions. The effects of contaminants in the reactor coolant are temperature dependent. It is consistent, therefore, to permit higher concentrations to exist for a longer period of time when at reduced temperatures and still provide the assurance that the integrity of the primary coolant system will be maintained.

If these reduced temperature steady state limits are exceeded, measures can be taken to correct the condition (e.g., replacement of ion exchange resin or adjustment of the hydrogen concentration in the volume control tank) (Ref. 1), because of the time dependent nature of any adverse effects arising from oxygen, chloride, and fluoride concentration in excess of the limits. Thus the period of 48 hours for corrective action to restore concentrations within the limits has been established. If the corrective action has not been effective at the end of the 48-hour period, then the reactor will be brought to MODE 5 and the corrective action will continue.

Whenever, RCS chemistry limits are exceeded, corrective actions to identify the cause and prevent recurrence are initiated.

In order to restore the contaminant concentrations to within specification limits in the event such limits were exceeded, mixing of the primary coolant with the reactor coolant pumps may be required. This will result in a small heatup of short duration. However, in no case shall this action be allowed to increase the average coolant temperature above 250°F.

REFERENCES 1. UFSAR Section 9.2

3.4 REACTOR COOLANT SYSTEMS (RCS)

3.4.B Reactor Vessel Head Vents

TRO 3.4.B Reactor Vessel Head vent shall be OPERABLE with the associated vent positions as shown in Table 3.4.B-1.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Reactor vessel head vent inoperable.	A.1	Verify reactor vessel head vent isolated with power removed from the associated vent valve.	Immediately
	AND		
	A.2	Restore reactor vessel head vent to OPERABLE status.	30 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.4.B.1	Verify flow through the Reactor Coolant System vents.	24 months

Table 3.4.B-1 (page 1 of 1)
Reactor Vessel Head Vent Valves

VALVE	POSITION
1. HCV-3100	Closed
2. HCV-3101	Closed
3. Manual Valve 500	Open

3.4 REACTOR COOLANT SYSTEMS (RCS)

B 3.4.B Reactor Vessel Head Vents

BASES

Reactor Coolant System Vents are provided to vent noncondensible gases from the primary coolant system. The OPERABILITY of two reactor coolant system vents from the reactor vessel head provides a backup to the PORVs which are required by Technical Specification and provide a similar function.

The valve redundancy of the reactor coolant system vents serves to minimize the probability of inadvertent or irreversible actuation while ensuring a single failure of a vent valve power supply or control system does not prevent isolation of the vent path.

The function, capabilities, and testing requirements of the reactor coolant system vents systems are consistent with the requirements of Item II.B.1 of NUREG-0737, “Clarification of TMI Action Plan Requirements,” November 1980.

The requirement in TRS 3.4.B.1 establishes the surveillance test to be performed at 24 month intervals to verify the operability of the reactor coolant system vents. This qualitative flow test will verify that the vents identified in TRO 3.4.B will be available to vent gases from the primary coolant system by demonstrating no blockage exists in the vent systems paths.

The periodic testing required by the ASME Code Section XI for each valve in the vents is conducted as specified in the Indian Point Unit No.2 Inservice Inspection and Testing Program and is therefore not included in these Requirements.

REFERENCES 1. UFSAR Section 4.2.10

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.C Pressurizer Temperature Limits

TRO 3.4.C The following pressurizer temperature limits shall be met:

a. The pressurizer heatup rate averaged over one hour shall be $\leq$ 100°F/hr;

b. The pressurizer cooldown rate averaged over one hour shall be $\leq$ 200°F/hr; and

c. The temperature difference between the pressurizer and the spray fluid shall be $\leq$ 320°F.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Temperature difference between pressurizer and spray fluid exceeded.	A.1 Do not use pressurizer spray.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
None	N/A

3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.C Pressurizer Temperature Limits

BASES

Although the pressurizer operates at temperature ranges above those for which there is reason for concern about brittle fracture, operating limits are provided to assure compatibility of operation with the fatigue analysis performed in accordance with the ASME Boiler and Pressure Vessel Code, Section III, 1965 Edition and associated Code Addenda through the Summer 1966 Addendum.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.D Containment Free Volume Leakage

TRO 3.4.D The Containment Leakage system shall be OPERABLE with total leakage into the containment free volume ≤ 10 gpm.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Total leakage into the containment free volume > 10 gpm.	A.1 Reduce leakage rate to ≤ 10 gpm.	12 hours
B. One required containment sump pump inoperable.	B.1 Start OPERABLE containment sump pump and verify discharge flow. AND B.2 Restore containment sump pump to OPERABLE status.	Once per 24 hours 7 days
C. One required recirculation sump level monitors inoperable.	C.1 Restore recirculation sump level monitor to OPERABLE status.	14 days
D. One required reactor cavity level monitor inoperable.	D.1 Restore required reactor cavity level monitor to OPERABLE status.	30 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Water level in the containment sump = EL. 45'. OR Water level in the recirculation sump = EL. 35'. OR Water level in the reactor cavity = EL. 20'. OR Required Action and associated Completion Time for Condition A not met.	E.1 Restore water level.	36 Hours
F. Water level in the containment sump > EL. 45'. OR Water level in the recirculation sump > EL. 40' 6" OR Water level in the reactor cavity > EL. 20' 5". OR Required Action and associated Completion Time for Condition E not met.	F.1 Enter TRO 3.0.C.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Required Action and associated Completion Time of Condition B, C or D not met.	G.1 Perform visual inspection of containment. OR G.2 Enter TRO 3.0.C.	12 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.4.D.1	Monitor the recirculation sump inventory.	12 hours
TRS 3.4.D.2	Monitor the reactor cavity inventory.	12 hours
TRS 3.4.D.3	Perform CHANNEL CHECK on recirculation sump level.	12 hours
TRS 3.4.D.4	Perform CHANNEL CHECK on reactor cavity level.	12 hours
TRS 3.4.D.5	Verify each containment sump pump's discharge flow is $\geq$ 25 gpm.	31 days
TRS 3.4.D.6	Verify each containment sump pump starts and stops at the appropriate setpoints with each pump's discharge flow is $\geq$ 25 gpm.	24 months
TRS 3.4.D.7	Perform CHANNEL CALIBRATION on recirculation sump level.	24 months
TRS 3.4.D.8	Perform CHANNEL CALIBRATION on reactor cavity level.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.D Containment Free Volume Leakage

BASES

An OPERABLE RCS Containment Leakage System consists of:

a. Two containment sump pumps;

b. Two containment sump level monitors;

c. Two recirculation sump level monitors; and

d. Two reactor cavity level monitors.

Water inventory balances, monitoring equipment, radioactive tracing, boric acid crystalline deposits, and physical inspections can disclose reactor coolant leaks. Any leak of radioactive fluid, whether from the reactor coolant system primary boundary or not, can be a serious problem with respect to in-plant radioactivity contamination and cleanup or it could develop into a still more serious problem; therefore, first indications of such leakage will be followed up as soon as practicable.

Although some leak rates on the order of gpm may be tolerable from a dose point of view, especially if they are into closed systems, it must be recognized that leaks on the order of drops per minute through any pressure boundary of the primary system could be indicative of materials failure such as by stress corrosion cracking. If depressurization, isolation and/or other safety measures are not taken promptly, these small leaks could develop into much larger leaks, possibly into a gross pipe rupture.

If leakage is to the containment, water may collect in the recirculation sump and/or reactor cavity depending on the size and location of the leak. However, under most circumstances, the containment sump will be filled prior to the recirculation sump filling and both sumps will be filled prior to water level increasing on the containment floor (EL. 46') sufficient to initiate filling of the reactor cavity. Level monitoring of the recirculation sump is provided by two level instruments which actuate control room lights at discrete sump/containment water levels and provide an audible alarm for certain discrete levels within the recirculation sump. In addition, another level monitoring device provides a continuous level readout in the control room. Level monitoring of the reactor cavity is provided by a single analog continuous level indication in the control room and by two separate and independent level switches, each of which actuates an audible alarm in the control room.

If the water level in the containment sump reaches EL. 45' or the water level in the recirculation sump reaches EL. 35', or the water level in the reactor cavity reaches EL. 20', 36 hours is allowed to restore the water level within limits. If water levels can not be restored within 36 hours, TRO 3.0.C will be entered. If the water level in the containment sump increases

BASES (continued)

above EL. 45‘ and the water level in the recirculation sump increases above EL. 40’ 6”, or the water level in the reactor cavity increases above EL. 20’ 5”, the operator will immediately enter TRO 3.0.C.

TRS 3.4.D.7 specifies a CHANNEL CALIBRATION for the recirculation sump level monitors. Testing performed under TRS 3.4.D.7 includes operability testing for the recirculation sump level monitors that serves to confirm that the output of the instruments respond as required “…within the necessary range and accuracy to known values of the parameter that the channel monitors.” Therefore, the verification of instrument output performed by manually actuating the individual switches associated with these instruments satisfies the definition of a CHANNEL CALIBRATION.

TRS 3.4.D.8 specifies a Channel Calibration of the reactor cavity level monitors. Although the transducers for these instruments are not individually adjustable devices, their output is confirmed to respond as required “…within the necessary range and accuracy to known values of the parameter that the channel monitors.” Therefore, the verification of instrument output performed by raising/lowering the level of the sump or calibration tube satisfies the definition of a channel calibration.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.E Pressurizer Safety Valves

TRO 3.4.E One pressurizer code safety valve shall be OPERABLE; or

An opening greater than or equal to the size of one code safety valve flange shall be provided.

APPLICABILITY: MODE 4 when any RCS cold leg temperature is ≤ 288°F,
MODE 5 except for hydrostatic testing of the RCS in accordance with Section XI of the ASME Boiler and Pressure Vessel Code,
MODE 6 when reactor vessel head is on.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required pressurizer code safety valve inoperable. AND Required RCS vent path not established.	A.1 Verify Technical Specification 3.4.12, LTOP, requirements are met. AND A.2 Initiate action to restore at \least one pressurizer code safety valve to OPERABLE.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
None	NA

3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.E Pressurizer Safety Valves

BASES

RCS overpressure protection is established in accordance with Technical Specification LCO 3.4.10, Pressurizer Safety Valves, when RCS temperature is greater than 288°F, and by Technical Specification LCO 3.4.12, Low Temperature Overpressure Protection (LTOP), when RCS temperature is less than or equal to 280°F. This TRO ensures that ASME Code requirements are met when Technical Specification LCO 3.4.12, LTOP, establishes RCS overpressure protection requirements that are significantly more conservative than the ASME Code.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.H Pressurizer Power Operated Relief Valve (PORV) — Backup Nitrogen System

TRO 3.4.H PORV Backup Nitrogen System shall be OPERABLE

APPLICABILITY: Whenever OPS is required to be OPERABLE for LTOP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PORV Backup Nitrogen System INOPERABLE.	A.1 Restore backup to PORV	7 Days
B. Condition A.1 not restored within 7 days or Both PORV Backup nitrogen systems INOPERABLE.	B.1 Initiate actions to place the reactor in a condition where OPS is not required.	Immediately.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.4.H.1	Demonstrate that the PORV backup nitrogen system is OPERABLE.	24 months

3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.H Pressurizer Power Operated Relief Valve (PORV) — Backup Nitrogen System

BASES

Required for OPERABILITY of OPS to prevent RCS overpressurization.

3.7 PLANT SYSTEMS

3.7.A Deleted

3.7 PLANT SYSTEMS

B 3.7.A Deleted

3.7 PLANT SYSTEMS

3.7.B Explosive Gas Monitoring

TRO 3.7.B The concentration of oxygen in the waste gas holdup system shall be limited to ≤ 2% by volume when the hydrogen concentration is > 4%.

AND

Hydrogen and oxygen shall be continuously monitored.

APPLICABILITY: Whenever waste gas holdup system is required to be in operation.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each required channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Concentration of oxygen in the waste gas holdup system > 2% and ≤ 4% by volume.	A.1 Reduce oxygen concentration to within limits.	48 hours
B. Concentration of oxygen in the waste gas holdup system > 4% by volume. AND Concentration of hydrogen in the waste gas holdup system is > 2%.	B.1 Suspend all additions of waste gas to the system. AND B.2 Reduce oxygen concentration to ≤ 2% by volume.	Immediately Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required hydrogen monitor(s) inoperable. OR Required oxygen monitor(s) inoperable.	C.1 ---------- **- NOTE -** Only applicable during degassing operations. ---------- Obtain and analyze grab sample. AND C.2 ---------- **- NOTE -** Not applicable during degassing operations. ---------- Obtain and analyze grab sample.	 4 hours 24 hours

SURVEILLANCE REQUIREMENTS

- NOTE -

TRS 3.7.B.1, TRS 3.7.B.2, and TRS 3.7.B.3 apply to each Explosive Gas Monitoring Function in Table 3.7.B-1.

SURVEILLANCE		FREQUENCY
TRS 3.7.B.1	Perform CHANNEL CHECK.	24 hours
TRS 3.7.B.2	Perform COT.	31 days
TRS 3.7.B.3	Perform CHANNEL CALIBRATION.	92 days

Table 3.7.B-1 (page 1 of 1)
Explosive Gas Mixture

INSTRUMENT	REQUIRED CHANNELS
1. Hydrogen Monitor[(a)]	1
2. Oxygen Monitor[(b)]	1

(a) Standard gas samples shall be less than or equal to two volume percent hydrogen and greater than or equal to four volume percent hydrogen.

(b) Standard gas samples shall be less than or equal to two volume percent oxygen and greater than or equal to two volume percent oxygen.

3.7 PLANT SYSTEMS

B 3.7.B Explosive Gas Monitoring

BASES

No Bases information provided.

3.7 PLANT SYSTEMS

3.7.D Electrical Tunnel Ventilation System

TRO 3.7.D Two Exhaust Fans and associated Louvers shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3 and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Exhaust Fan non-functional.	A.1 Restore Exhaust Fan to FUNCTIONAL status.	7 Days
B. Required Action and associated Completion Time of A.1 not met	B.1 Issue a CR and, in response to a CA, prepare a corrective action report outlining the cause of the inoperability of required equipment, the extent of condition, and the plans and schedule for restoring the inoperable equipment to FUNCTIONAL status.	5 Days
C. Two Exhaust Fans non-functional.	C.1 Evaluate supported Technical Specification components for continued operability AND C.2 Restore one fan to FUNCTIONAL status	6 hours Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.7.D.1	Verify each Exhaust Fan has the capability to operate at the required RPMs.	12 Months
TRS 3.7.D.2	Verify each Exhaust Fan will automatically actuate at setpoint temperatures.	24 Months

3.7 PLANT SYSTEMS

B 3.7.D Electrical Tunnel Ventilation System

BASES

BACKGROUND

The Electrical Tunnel Ventilation System (ETVS) provides temperature control for both the Electric Tunnel and Cable Spreading Room during both normal operation and during Design Basis Accident conditions.

The ETVS consists of two temperature controlled Exhaust Fans for the single tunnel that provide cooling by way of moving outside air through the upper and lower tunnel respectively in one pass. The tunnel has 2 - 100 percent capacity fans. One fan will start automatically when the temperature in the tunnel reaches 100°F. Under the worst conditions (i.e., loss of outside power and all the Emergency Safety Features in operation), one ventilation fan is capable of maintaining the tunnel temperature below 104°F. Under the same worst conditions, if no ventilation fans were operating, the natural air circulation through the tunnel would be sufficient to limit the gross tunnel temperature to below the tolerable value of 140°F. The Exhaust Fans are powered from safeguards power trains (Exhaust Fan 21 from MCC 26A, Switchgear 21, Bus 5A and Exhaust Fan 22 from MCC 26B, switchgear 22, Bus 6A). The Exhaust Fans are designed to perform their design function during an accident with an outside air temperature of 93^{o}F.

APPLICABLE SAFETY ANALYSES

The design basis of the ETVS is to maintain acceptable temperature in the Electrical Tunnel and Cable Spreading Room during normal operation and during accident conditions. The ETVS is automatically powered following an accident and will be initiated at temperature setpoints.

The ETVS have the capability to maintain required temperatures for normal and post accident heat loads.

TRO

Two Exhaust Fans in the ETVS are required to be FUNCTIONAL. CSR&ETVS failure could result in the required equipment operating temperature exceeding limits in the event of an accident.

The CSR&ETVS Ventilation System is considered to be FUNCTIONAL when the individual components necessary to maintain the required temperature are FUNCTIONAL.

APPLICABILITY

In MODES 1, 2, 3 and 4, the ETVS must be FUNCTIONAL to ensure that the temperature will not exceed equipment operational requirements.

BASES

APPLICABILITY (continued)

The ETVS is not required by this TRM in MODE 5 or 6, or during movement of irradiated fuel assemblies and core alterations because loss of the ETVS would require supported equipment to be declared non-functional and the TS would dictate required actions. Also, these plant conditions represent the modes to which the plant must be brought if the plant must be shut down.

ACTIONS

A.1

With one Exhaust Fan non-functional, action must be taken to restore the Exhaust Fan to FUNCTIONAL status within 7 days. In this Condition, the ETVS is adequate to maintain the required temperature within limits. However, the overall reliability is reduced because a single failure could result in excessive temperatures during a design basis event. The 7 day Completion Time is based on the low probability of an event requiring emergency equipment operation, and the consideration that the remaining train can provide the required temperature control without failure

B.1

If Required Action A.1 is not met within the required Completion Time a CR must be written and a CA issued to evaluate return to FUNCTIONALITY.

C.1 and C.2

With two Exhaust Fans non-functional, the plant must evaluate the continued operability of Technical Specification (TS) components that rely on forced air to maintain cooling and equipment qualification. Required actions will be defined by the TS as needed if not functional. Action must be taken to restore one fan to functional status immediately with no defined time for completion.

SURVEILLANCE REQUIREMENTS

TRS 3.7.D.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load required to maintain temperature control of the Electrical Tunnel and Cable Spreading Room during design basis events. This SR may consist of a verification of the correct RPM and calculations. The 12 month Frequency is appropriate since significant degradation of the CSR&ETVS is slow and is not expected over this time period.

TRS 3.7.D.2

This SR verifies that the Exhaust Fans are automatically started when temperatures reach a preset value and operation terminates as temperature drops to a preset value. These values were used in determining the ability of the fans to perform the required action. The frequency is reasonable for the thermostats.

REFERENCES

3.7 PLANT SYSTEMS

3.7.E City Water Supply

TRO 3.7.E City water shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. City Water Storage Tank inoperable.	A.1 Restore City Water Storage Tank to OPERABLE status.	12 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Declare the SBO / Appendix R Diesel inoperable	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.7.E.1	Verify City Water Storage Tank maintains a water level of >655,000 gallons	12 hours
TRS 3.7.E.2	Verify City Water Storage Tank valves to required loads are operable	90 days
TRS 3.7.E.3	Verify altitude valve and city water makeup valves are operable	90 days
TRS 3.7.E.4	Perform channel Calibration of City Water Storage Tank level monitoring instruments	24 months

3.7 PLANT SYSTEMS

B 3.7.E City Water Supply

BASES

BACKGROUND

Two City water supply headers provide a water supply for both Unit 2 and Unit 3. One city water header supplies the City Water Storage Tank (CWST) through a fill valve, meter and a second fill valve. A second City water supply header provides water to the Unit 3 fire water storage tank. The CWST provides a protected water inventory because the continued supply of city water from offsite can not be guaranteed. The CWST is the backup water supply referred to in Technical Specification 3.7.6.

APPLICABLE SAFETY ANALYSES

The CWST is 42' high and is continually providing a water supply for normal plant uses while maintaining a reserve of water for postulated plant events. The events are Unit 2 Appendix R requirements, Unit 2 SBO requirements, Unit 2 fire fighting, Unit 2 CST backup and redundancy for the Unit 3 CST in the event of its loss (e.g., due to a Tornado missile). The following events are considered simultaneously for the Unit 2 Appendix R fire and their requirements constitute the need for a bounding reserve of 655,000 gallons based on the following:

1. Cooling of the Unit 2 SBO / Appendix R diesel for a Unit 2 Appendix R event – The Appendix R / SBO diesel is a water cooled engine. The engine cooling water requirement is 205 gpm. The CWST provides the engine cooling water for the entire SBO event. However, this event is not postulated simultaneously with an App R event. For an App R event, the CWST protected inventory has been established to provide a minimum of 4 hours supply of cooling water to the engine (this requires 50,000 gallons of reserve). Engine cooling can be transferred to Service Water supply, as required, for the balance of the App R event (see TRM for SBO / App. R diesel).

2. Fire Fighting Water Supply – The plant is committed to having a dedicated water inventory of 300,000 gallons for fire fighting.

3. The city water tank is credited as a backup for fire induced opening of CST drain valves and must supply 215,000 gallons over 30 hours for safe shutdown.

4. Alternate CCW usage of 125 gpm must be supplied for four hours until service water is lined up. This requires 30,000 gallons of protected inventory.

5. Coincident users assumed to be provided water at 500 gpm for two hours (this requires switchover to SW for the SBO / Appendix R diesel in two hours) based on historical usage of water. This requires 60,000 gallons of protected inventory.

The CWST provides for a redundant water supply of 360,000 gallons for the Unit 3 CST (See requirements of Unit 3 TS 3.7.7). A tornado missile was not postulated to result in a loss of the Unit 3 CST as well as the Unit 2 SBO event but the reserve of 655,000 is adequate to meet this event since the 655,000 gallons includes 300,000 gallons of Unit 2 fire water and 215,000 gallons of Unit 2 CST backup water for an Appendix R event. The CWST provides the backup water supply for Unit 3 for a fire induced opening of CST drain valves while fire fighting is provided for by the Unit 3 fire water tanks. An Appendix R event is not postulated for two units at the same time. Neither is a SBO event.

TRO

The CSWT must contain a reserve of >655,000 gallons to assure that Unit 2 and 3 postulated events are certain to have an adequate protected inventory of water.

APPLICABILITY

In MODES 1, 2, 3, 4 the identified events can occur and require the CWST protected inventory to be available. The CWST is not required by this TRM in MODE 5 or 6 for any postulated event.

ACTIONS

A.1

With the CWST <655,000 gallons the CWST is considered inoperable and there are 12 hours to restore the water level. This is a reasonable period of time given that restoration involves the isolation of non essential water usage to allow the city water fill line to restore the required level.

B.1 and B.2

With the CWST not restored to the required water level in 12 hours, the potential exists for the inability to provide the necessary water for Unit 2 & 3 licensing basis events. The declaration of the SBO / Appendix R diesel inoperable initiates the actions in TRM 3.8.B. The declaration of the CWST tank inoperable initiates the actions of Unit 3 TS 3.7.7.

SURVEILLANCE REQUIREMENTS

TRS 3.7.E.1

This SR verifies that the CWST level requirements are met. The time frame is considered reasonable to assure that an adequate protected water inventory is maintained, and is on the same periodicity as the Unit 3 TS 3.7.7 surveillance of water pressure and Unit 2 TS 3.7.6 Surveillance of the CST.

TRS 3.7.E.2

The CWST supplies water to the Unit 2 Appendix R / SBO diesel heat exchangers,

the CST, the alternate CCW, and the fire header. The supplies to the CST, CCW and fire header are preexisting requirements of the fire protection system and valves are tested as required by that program. The supply valves to the Appendix R / SBO diesel are required to be verified operable to ensure they function when required.

TRS 3.7.E.3

Testing of the function of the altitude valves is verification that the valves all work as intended to assure continued water makeup. This can be by observation of the refill function.

TRS 3.7.E.4

The instrumentation necessary for operations to verify the CWST level is within the required value must be calibrated to assure sufficient accuracy.

3.7 PLANT SYSTEMS

3.7.F Post-Accident Containment Venting System

TRO 3.7.F The Post-Accident Containment Venting System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Post Accident Containment Venting System inoperable.	A.1 Verify two hydrogen recombiners are OPERABLE. AND A.2 Restore Post Accident Containment Venting System to OPERABLE status.	Immediately 30 days
B. Required Action and associated Completion Time not met.	B.1 Enter TRO 3.0.C.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.7.F.1	--- **- NOTES -** 1. Sample shall be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978. 2. Sample shall be tested in accordance with ASTM D3803-1989. --- Verify laboratory sample of the charcoal adsorber shows a methyl iodide penetration of less than 15.0%	Within 31 days after completing 720 hours of charcoal adsorber operation
TRS 3.7.F.2	Verify post-accident containment venting system has no flow blockage by passing flow through the filter system.	60 months OR After structural maintenance on the HEPA filter or charcoal adsorber housings that could alter filter integrity OR After painting, fire or chemical release in any ventilation zone communicating with the system while it is in operation

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
TRS 3.7.F.3	Verify the system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, at ambient conditions and at a flow rate of 200 CFM ± 10%.	60 months OR After structural maintenance on the HEPA filter or charcoal adsorber housings OR Any time painting, fire or chemical releases could alter filter integrity
TRS 3.7.F.4	--- **- NOTES -** 1. Sample shall be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978. 2. The 60 month test sample shall be verified within 31 days after removal. --- Verify a laboratory sample of the charcoal adsorber shows a methyl iodide penetration of < 15% when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F), and a relative humidity of 95% and face velocity of 0.203 m/sec (40 ft/min).	60 months OR After structural maintenance on the HEPA filter or charcoal adsorber housings OR Any time painting, fire or chemical releases could alter filter integrity

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRS 3.7.F.5	Verify the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches water gauge while operating the system at ambient conditions and a flow rate of 200 cfm ±10%.	60 months
TRS 3.7.F.6	Verify the system valves can be manually opened.	60 months
TRS 3.7.F.7	Verify the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 200 cfm ± 10%.	After each complete or partial replacement
TRS 3.7.F.8	Verify the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and a flow rate of 200 cfm ± 10%.	After each complete or partial replacement

3.7 PLANT SYSTEMS

B 3.7.F Post-Accident Containment Venting System

BASES

Two independent diverse systems, the hydrogen recombiners and the post-accident containment venting system, are provided for removal of combustible hydrogen from the containment building atmosphere. Either of the two hydrogen recombiners or the post accident containment venting system are capable of wholly providing this function in the event of a design basis accident.

Two full-rated hydrogen recombination systems are provided in order to control the hydrogen evolved in the containment following a loss-of-coolant accident. Either system is capable of preventing the hydrogen concentration from exceeding 4% by volume within the containment. Each system is separate from the other. The containment atmosphere sampling system consists of a sample line which originates in each of the containment fan cooler units. The fan and sampling pump head together are sufficient to pump containment air in a loop from the fan cooler through a containment penetration to a sample vessel outside the containment, and then through a second penetration to the sample termination inside the containment. The recombiner will operate at hydrogen concentration above 0.25% by volume. Conservative calculations indicate that the hydrogen content within the containment will not reach 4% by volume.

The Post-Accident Containment Venting System consists of a common penetration line which acts as a supply line through which hydrogen-free air can be admitted to the containment, and an exhaust line, with parallel valving and piping, through which hydrogen-bearing gases from containment may be vented through a filtration system.

The supply flow path makes use of instrument air to feed containment. The normal flow rate from either of the two instrument air compressors is 200 scfm. If the instrument air system is not available, the station air system is available as a backup.

The exhaust line penetrates the containment and then is divided into two parallel lines. Each parallel line contains a pressure sensor and all the valves necessary for controlling the venting operation. The two lines then rejoin and the exhaust passes through a flow sensor and a temperature sensor before passing through roughing, HEPA and charcoal filters. The exhaust is then directed to the plant vent.

The post-accident containment venting system is a passive system in the sense that a differential pressure between the containment and the outside atmosphere provides the driving force for the venting process to take place. The system is designed such that a minimum internal containment pressure of 2.14 psig is required for the system to operate properly. The flow rate and the duration of venting required to maintain the hydrogen concentration at or below 3 percent of the containment volume are determined from the containment hydrogen concentration measurements and the hydrogen generation use. The containment pressure necessary to obtain the required flow is then determined. Using one of the air compressors,

BASES (continued)

hydrogen-free air is pumped into the containment until the required containment pressure is reached. The air supply is then stopped and the supply/exhaust line is isolated by valves outside the containment. The addition of air to pressurize the containment dilutes the hydrogen; therefore, the containment will remain isolated until analysis of samples indicates that the concentration is again approaching 3 percent by volume. Venting will then be started. This process of containment pressurization followed by venting is repeated as may be necessary to maintain the hydrogen concentration at or below 3 volume percent.

The post-accident venting system is used only in the absence of hydrogen recombiners and only when absolutely necessary. From the standpoint of minimizing offsite radiation doses, the optimum starting time for the venting system, if needed, is the longest possible time after the accident. Consistent with this philosophy, the selected venting initiation point of 3 percent hydrogen maximizes the time period before venting is required while at the same time allows a sufficient margin of safety below the lower flammability limit of hydrogen.

3.7. PLANT SYSTEMS

3.7.G Primary Auxiliary Building Ventilation System

TRO 3.7.G Two Exhaust Fans with Charcoal Adsorber /HEPA Filter shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3 and 4

Note: Separate Condition entry is allowed for a Fan and for Charcoal Adsorber / HEPA Filter

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Exhaust Fan non-functional.	A.1 Restore to FUNCTIONAL status.	30 days
B. Charcoal Adsorber and / or HEPA filter non-functional.	B.1 Restore to FUNCTIONAL status. AND B.2 Verify flow through charcoal is 55,000 cfm ± 10%.	90 days 1 day
	--- NOTE With one Exhaust fan operational, both exhaust fans may be made inoperable (e.g. tagged out) to allow entry to plenum for testing or repair and the actions need not taken if: PAB temperatures are monitored every hour, and if an Exhaust Fan(s) can be made operational within 2 hours if either the PAB temperature is expected to exceed 100°F within 2 hours or if there is an SI signal. ---	
C. Required Action B.2 or associated Completion Time not met, OR Two Exhaust Fans non-functional.	C.1 Evaluate supported Technical Specification components for continued operability. AND C.2 Restore one fan to FUNCTIONAL status	6 hours Immediately

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action A.1 or B.1 and associated Completion Time not met.	D.1 Issue a CR and, in response to a CA, prepare a corrective action report outlining the cause of the inoperability of required equipment, the extent of condition, and the plans and schedule for restoring the inoperable equipment to FUNCTIONAL status.	12 days

SURVEILLANCE REQUIREMENT

	SURVEILLANCE	FREQUENCY
TRS 3.7.G.1	Verify each Exhaust Fan has the capability to operate at the required RPMs.	24 months
TRS 3.7.G.2	Perform an inplace test of the high efficiency particulate air (HEPA) filters in accordance with Section 10 of ASME N510-1989 that shows the penetration and system bypass leakage is > 99% at a flow rate of 55,000 cfm $\pm$10%.	24 months And Following removal of Sample affecting integrity
TRS 3.7.G.3	Perform an inplace test of the charcoal adsorber in accordance with Section 11 of ASME N510-1989 that shows the specified penetration and system bypass leakage is > 60% at a flow rate of 55,000 cfm $\pm$10%.	24 months And Following removal of Sample affecting integrity
TRS 3.7.G.4	Perform a laboratory test of a sample of the charcoal adsorber in accordance with ASTM D3803-1989 that shows the methyl iodide removal efficiency of $\geq$ 60% when tested at a temperature of 86^{O}F, a relative humidity of 95%, and a face velocity of 31 ft/min.	24 months And Following significant painting, fire, or chemical release

TRS 3.7.G.5	----------NOTE---------- After each complete or partial replacement of the HEPA filter train or charcoal adsorber filter; or, after any structural maintenance on the system housing that could alter system integrity; or, after significant painting, fire, or chemical release in any ventilation zone communicating with the System while it is in operation. ---------- Perform Surveillances 3.7.G.2 and 3.7.G.3.	After Event

3.7 PLANT SYSTEMS

B 3.7.G Primary Auxiliary Building Ventilation System

BASES

BACKGROUND

The Primary Auxiliary Building (PAB) Ventilation System (PABVS) provides temperature control for the PAB during normal operation, and during postulated accident conditions and maintains release rates as low as reasonably achievable. The temperature control function is required to maintain the temperatures in the PAB within the required design levels.

The PABVS consists of one supply fan and two exhaust fans that provide cooling by way of moving outside air through the building in one pass. In addition to the fans, the PABVS also includes a single train of Pre Filter, and a HEPA filter / Charcoal adsorber. The Supply fan, Pre Filter, and HEPA filter / Charcoal adsorber are not required for the PABVS to perform its temperature control function post accident but must allow the required flow. The PAB exhaust fans and plenum serve the function of containment purge exhaust as well as PAB exhaust.

The 100 percent redundant exhaust fans are powered from safeguards power trains (exhaust fan 21 is supplied from MCC 26C, Switchgear 22, Bus 3A and exhaust fan 22 is supplied from MCC 27A, Switchgear 22, Bus 6A. The exhaust fans require manual loading on to their associated EDG. The PABVS exhaust fans are designed to perform their design function during an accident with an outside air temperature of 93^{o}F. The supply fan is supplied from MCC 27A, Switchgear 22, Bus 6A.

The PABVS shall be periodically tested (a 25 % allowance is allowed consistent with the philosophy of TRS 3.0.B) to assure continued FUNCTIONALITY.

The requirements of the General Design Criteria are not applicable to the Licensing design basis of the plant. However, their guidance is considered. GDC 1 applies to systems based on safety function and would apply to the cooling function of the exhaust fans. GDC 60 and 61 relate to normal releases of radioactivity and would apply to the charcoal adsorbers / HEPA filters.

APPLICABLE SAFETY ANALYSES

The design basis of the PABVS is to maintain the PAB temperature during normal operation and for post accident conditions. The PABVS exhaust system is manually started within 2 hours following an accident.

The PABVS was designed as a commercial system but has the capacity to maintain required temperatures for normal and post accident heat loads. The required temperatures means that the ambient temperature for safety equipment located in the PAB will not exceed maximum acceptable temperature. The original design was not required to meet single failure criteria and, does not satisfy all requirements in IEEE-279 for single failure tolerance. It is seismically functional.

BASES

APPLICABLE SAFETY ANALYSIS (continued)

The HEPA filters and charcoal adsorbers associated with the exhaust fan were credited for 99% and 0% removal efficiency, respectively, in the analysis used to demonstrate compliance with 10 CFR 50, Appendix I (Reference 1). The charcoal filters were credited for 90% removal efficiency when the containment was purged through those filters.

TRO

Two exhaust fans of the PABVS are required to be FUNCTIONAL to ensure that at least one Exhaust Fan is available, assuming a single active failure affecting one fan. Total system failure could result in the PAB equipment operating temperature exceeding limits in the event of an accident.

The PABVS is considered to be FUNCTIONAL when the individual components necessary to maintain the required temperature are OPERABLE.

HEPA filter / charcoal adsorber are required to be FUNCTIONAL to satisfy 10 CFR 50 Appendix I analyses for maintaining normal releases as low as reasonably achievable and to pass required flow for post accident. They are considered to be FUNCTIONAL when they pass surveillance tests.

APPLICABILITY

In MODES 1, 2, 3 and 4, the PABVS must be FUNCTIONAL to ensure that the air temperature will not exceed equipment operational requirements and that releases are as low as reasonably achievable.

The PABVS is not required by this TRM in MODE 5 or 6, or during movement of irradiated fuel assemblies and core alterations because these conditions have varying requirements which this TRM is not trying to address. The PABVS HEPA filters and charcoal filters are desired for cleanup but releases can be calculated without the filters and are monitored offsite.

Also, these plant Modes can use compensatory air circulation and represent the modes to which the plant must be brought if the plant must be shut down.

ACTIONS

A.1

With one PABVS exhaust fan non-functional, action must be taken to restore it to FUNCTIONAL status within 30 days. In this Condition, the remaining FUNCTIONAL exhaust fan is adequate to maintain the temperature within limits. However, the overall reliability is reduced because a single failure in the FUNCTIONAL exhaust fan could result in loss of temperature control function. The 30 day Completion Time is based on the low probability of an event requiring emergency equipment operation, and the consideration that the remaining component can provide the required temperature control without failure. The 30 days is also consistent with the Unit 3 Technical Specification for Control Room air conditioning.

BASES

ACTIONS (continued)

B.1 and B.2

With the charcoal adsorber and / or HEPA filter non-functional, action must be taken to restore it to FUNCTIONAL status within 90 days. In this condition the releases during normal operation will increase but are monitored and calculated reflecting the component(s) out of service. No credit is given for the charcoal adsorber or HEPA filter for post accident doses so they are not required to be FUNCTIONAL. The 90 day completion time is reasonable given non-safety function of the equipment and the need to return charcoal adsorber / HEPA filters for compliance with 10 CFR 50 Appendix I. Action B.2 requires a demonstration that flow requirements are met. This assures the fan cooling function can be met and there is no blockage.

C.1 and C.2

If Required Action B.2 is not met within the required Completion Time or two Exhaust Fans become non-functional, the plant must evaluate the continued operability of Technical Specification (TS) components that rely on forced air to maintain cooling and equipment qualification. Required actions will be defined by the TS as needed. Action must be taken to restore one fan to functional status immediately with no defined time for completion.

This condition is modified by a note that allows the exhaust fans to be turned off and tagged out for personnel safety during testing and maintenance (includes replacing and / or repairing the components in the plenum) without taking required action. This note is necessary since entry into the plenum may require rendering two fans non-functional (personnel are active in the area) even though one remains available. The note recognizes that with one exhaust fan capable of being restored given the need, the exhaust fans may turned off / tagged out. The available fan is manually loaded in 2 hours after an accident or monitoring selected critical areas (operations determine from condition at the time) for temperatures that could exceed 100^{o}F if the exhaust is not restarted (Reference 2). This assures TS equipment environment is acceptable during normal operation and the exhaust fan can be restarted should temperatures rise. The note defers entry into the action statement as long as the conditions are met. However, it is assumed that the ability to restore the functional fan is assessed and personnel are available as necessary to restore the functional fan to service. This may be met by prior actions such as temporary alterations (e.g., add a blank fan for non functional fan damper work) to support immediate initiation of restoration of function when required.

D.1

When the completion time is not met, a CR must be written and a CA issued to evaluate return to FUNCTIONALITY.

SURVEILLANCE REQUIREMENTS

TRS 3.7.G.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load required to maintain temperature control of the PAB during design basis events. The measurement of fan RPM is intended to show it is working at the speed so that it will provide the proper air flow for cooling. The 24 month Frequency is appropriate since significant degradation of the PABVS is slow and is not expected over this time period.

TRS 3.7.G.2

Testing of the charcoal adsorbers / HEPA filters is performed using the guidance of Regulatory Guide (RG) 1.140. RG 1.140 was written to provide guidance for the design and testing of systems used to meet GDC 60 and 61 and Appendix I. This guide is not part of the licensing basis so guidelines have been adopted as a reasonable means of maintaining equipment in a FUNCTIONAL condition.

In place leakage testing of HEPA filters is performed to assure that the efficiency of the filter maintains the 90%. HEPA filters that fail should be examined to determine the location and cause of leaks. Repair of defective damaged or torn filter media by using patching materials or caulking is not recommended. Filters that fail the test should be replaced and retested. The frequency of 24 months is considered acceptable to assure operability.

TRS 3.7.G.3

In place leakage testing of charcoal adsorbers is performed to assure that the efficiency of the filter maintains the 60% (minimal bypass of charcoal). The charcoal adsorbers that fail should be examined to determine the location and cause of leaks. Repair of defective damaged or torn filter media by using patching materials or caulking is not recommended. Charcoal adsorbers that fail the test should be replaced and retested. The frequency of 24 months is considered acceptable to assure operability.

TRS 3.7.G.4

Laboratory testing of a sample of the charcoal is performed to assure the 60% filtration. Charcoal does not have to have a safety factor since the function is one of normal release mitigation. The face velocity is either that of the standard or is determined based on the flow and the surface area. Testing every 24 months is sufficient to assure the function.

TRS 3.7.G.5

Testing after significant painting, fire, or chemical release that could potentially affect the filters is sufficient to assure the function. Significant releases are determined by the system engineer. For the purpose of implementation, welding is not a fire, a chemical release or work that could alter filter integrity. Also, organic components from painting and similar activities do not alter filter integrity until the organic components are above 10% by weight. Filter testing shall be performed when the organic components are greater than or equal to 2.5% by weight organics.

REFERENCES

1. Con Edison letter PD-77-024 to NRC dated March 14, 1977.
2. NSE-99-03-075 ADMIN, Rev 0, Implementation of Rev. 1C to the WOG ERGs.

3.7 PLANT SYSTEMS

3.7.H Emergency Diesel Generator Ventilating System

TRO 3.7.H Two Exhaust Fans shall be FUNCTIONAL for each OPERABLE Emergency Diesel Generator.

APPLICABILITY: MODES 1, 2, 3, 4, 5, 6, except Condition C does not apply to Modes 5 and 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One non-functional Exhaust Fan	A.1 Restore Exhaust Fan to FUNCTIONAL status.	90 Days
B. Two non-functional Exhaust Fans	B.1 Restore one Exhaust Fan to FUNCTIONAL status.	60 Days
C. Three non-functional Exhaust Fans	C.1 Declare one EDG INOPERABLE and take action to prevent it from starting.	6 Hours
D. Required Action and associated Completion Time of A.1, B.1 or C.1 not met	D.1 Enter TRO 3.0.C	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.7.H.1	Verify each Exhaust Fan will automatically start and stop at nominal setpoint temperatures and that intake dampers / louvers open and close as required.	24 Months

3.7 PLANT SYSTEMS

B 3.7.H Emergency Diesel Generator Ventilation System

BASES

BACKGROUND

The Emergency Diesel Generator Ventilation System (EDGVS) provides temperature control for the EDG building during normal operation, and during postulated accident conditions.

The three EDG are housed in a single EDG Building. The Ventilation System serves the complete building and provides cooling by way of moving outside air through the building in one pass. Each fan is associated with an electric damper / louver which fails open on loss of power. The Exhaust Fans are powered from safeguards power trains with Exhaust Fans 318 and 323 powered from MCC 26B, Bus 6A (EDG 23), Exhaust Fans 319 and 320 powered from MCC 26A, Bus 5A (EDG 21), and Exhaust Fans 321 and 322 powered from MCC 26C, Bus 3A (EDG 22). The Exhaust Fans are designed to maintain acceptable temperature limits during an accident with an outside air temperature of 93^{o}F (one fan per EDG).

APPLICABLE SAFETY ANALYSES

The design basis of the EDGVS is to maintain the EDG Building (EDGB) temperature during normal operation and during design basis accident post accident conditions. The EDGVS is automatically controlled by the EDG starting circuitry and the EDGB thermostats.

The EDGVS was designed as a commercial system but has the capacity to maintain required temperatures for normal and post accident heat loads with one Exhaust Fan operating for each operable EDG. The required temperature means that the building temperature will not exceed 126 degrees F (Reference 1). The EDGVS is therefore a support system for the EDG.

A failure of a single component of the EDG Ventilation System, assuming a loss of offsite power, does not impair the ability of the system to perform its design function. However, the original design was not required to meet single failure criteria and, does not satisfy all requirements in IEEE-279 for single failure tolerance.

TRO

Two Exhaust Fans, with their associated damper / louver, of the EDGVS are required to be FUNCTIONAL in the EDG Building for each associated operable EDG. The EDGVS is considered to be FUNCTIONAL when all the individual components necessary to maintain the required exhaust fans, including the associated EDG, are FUNCTIONAL. Single failures are only postulated in Modes 1, 2, 3, and 4.

Three operating Exhaust Fans will ensure that temperature requirements are met with all three EDG operating and two operating Exhaust Fans will ensure that temperature requirements are met with two EDG operating (Reference 1). Less than one Exhaust Fan per operating EDG could result in the operating temperature exceeding limits.

BASES

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6 the EDGVS components must be FUNCTIONAL to ensure that the temperature will not exceed equipment operational requirements.

ACTIONS

A.1

With one EDGVS Exhaust Fan EDG non-functional, action must be taken to restore FUNCTIONAL status within 90 days. In this Condition, the remaining FUNCTIONAL Exhaust Fans are adequate to maintain the temperature within limits. In MODES 1, 2 , 3 and 4 , the overall reliability is reduced but continued operation is acceptable because a single failure in the FUNCTIONAL Ventilation System trains or failure of an EDG would result in at least 100% cooling capacity left. In MODES 5 and 6 only two EDG are required to be OPERABLE which would result in three remaining Exhaust Fans but no single failure is assumed in this MODE. The 90 day Completion Time is based on the low probability of an event requiring emergency equipment operation, and the consideration that the remaining Exhaust Fans can provide the required temperature control.

B.1

With two EDGVS Exhaust Fans non-functional, 60 days is a reasonable time frame to restore one of the Exhaust Fans to FUNCTIONAL status. With the two Exhaust Fans non-functional in MODES 1, 2, 3 and 4, the remaining four Exhaust Fans assure that no single failure of either an Exhaust Fan or an EDG will result in a loss of inadequate cooling. The failure of an EDG with two FUNCTIONAL Exhaust Fans leaves two Exhaust Fans for two EDG. The failure of one Exhaust Fan leaves three Exhaust Fans for three EDG. In MODES 5 and 6 with two EDG OPERABLE, there may be two FUNCTIONAL Exhaust Fans on one EDG however there is no assumed single failure.

C.1

With three EDGVS Exhaust Fans non-functional and three OPERABLE EDG, one of the EDG must be declared inoperable and action taken to prevent starting. The TS allow the single failure criteria to be tolled when an LCO component is out of service. This reduces the requirements to two Exhaust fans for two associated and operable EDG with no requirement for taking a single failure (otherwise the failure of an Exhaust Fan would leave two Exhaust Fans and three EDG operable and the heat removal would be insufficient). Removing one EDG from service means no additional postulated single failure is required (note the EDG with 2 Exhaust Fans non-functional is preferentially removed since the Exhaust Fans associated with the EDG removed from service are no longer considered FUNCTIONAL). In MODES 5 and 6 there is no single failure. Also, only two EDG are required to be OPERABLE (therefore 4 fans) so with three Exhaust fans out of service there is insufficient heat removal.

BASES

ACTIONS

D.1

If Required Action A.1, B.1 or C.1 is not met within the required Completion Time or two EDGVS Exhaust Fans for any one EDG and one ECDG Exhaust Fan for another EDG become non-functional, the plant must take immediate action to enter TRO 3.0.C. The action is based on the higher probability that a single failure could occur after a design basis event or the loss of function. Because of the number of Exhaust Fans available for cooling, it is expected that adequate Exhaust Fans may be available in many situations to support the cooling function based on the number of operable EDG.

SURVEILLANCE REQUIREMENTS

TRS 3.7.H.1

This SR verifies that the Exhaust Fans are automatically started when temperatures reach a preset value and operation terminates as temperature drops to a preset value. These values were used in determining the ability of the fans to perform the required function. The test also operates the dampers / louvers. These fans are direct drive and operate at a constant speed, the operation of these fans verifies the air flow required to provide the required heat removal. The period is considered adequate based on the current practice.

REFERENCES

1. Calculation IP-CALC-06-00281, Rev. 0, Ventilation System for the EDG Building

3.7 PLANT SYSTEMS

3.7.I Switchgear Room Ventilation System (CB - 15 ft EL)

TRO 3.7.I Three Exhaust Fans shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3 and 4,

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Exhaust Fan non-functional.	A.1 Restore Exhaust Fan to FUNCTIONAL status. AND A.2 Monitor SGR Temperature	7 Days Every 4 hours
B. Required Action and associated Completion Time of A.1 or A.2 not met	B.1 Initiate corrective action AND B.2 Issue a CR and, in response to a CA, prepare a corrective action report outlining the cause of the inoperability of required equipment, the extent of condition, and the plans and schedule for restoring the inoperable equipment to FUNCTIONAL status.	Immediately 5 Days
C. Two or more Exhaust Fans non-functional or Switchgear Room temperature exceeds 104^{o} F.	C.1 Evaluate supported Technical Specification components for continued operability.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.7.I.1	Verify each Exhaust Fan has the capability to operate at the required RPMs.	24 months

3.7 PLANT SYSTEMS

B 3.7.I Switchgear Room (CB – 15 ft EL) Ventilation System

BASES

BACKGROUND

The Switchgear Room Ventilation System (SGRVS) provides temperature control for the Switchgear room in the Control Building at 15 ft elevation during normal operation, and during postulated accident conditions.

The SGRVS consists of three Exhaust Fans that provide cooling by way of moving outside air through the building in one pass. Each exhaust fan moves 19,950 cfm and is less than 100 percent capacity. Power is provided to Exhaust Fan 21 from MCC 26C, Sgr 22, Bus 3A, power to Exhaust Fan 215 from MCC 29A, Sgr 21 from Bus 5A, and power to Exhaust Fan 216 from MCC 29, Sgr 21, Bus 5A. The Exhaust Fans are not automatically loaded following loss of offsite power and are manually started (Reference 1). The three Exhaust Fans are designed to perform their design function during an accident with no single failure at an outside air temperature of 93^{o}F.

APPLICABLE SAFETY ANALYSES

The design basis of the SGRVS is to maintain the Switchgear room temperature during normal operation. The SGRVS was designed as a commercial system but has the capacity to maintain required temperatures for normal and post accident heat loads. The required temperatures means that the ambient temperature for safety equipment located in the SGR will not exceed 104 degrees F. The original design was not required to meet single failure criteria.

TRO

Three Exhaust Fans of the SGRVS are required to be FUNCTIONAL to ensure that the required temperature can be maintained. Single failure of an Exhaust Fan could result in the equipment operating temperature exceeding limits in the event of an accident.

The SGRVS is considered to be FUNCTIONAL when the individual components necessary to maintain the required temperature are FUNCTIONAL.

APPLICABILITY

In MODES 1, 2, 3 and 4, the SGRVS must be FUNCTIONAL to ensure that the temperature will not exceed equipment operational requirements.

The SGRVS is not required by this TRM in MODE 5 or 6, or during movement of irradiated fuel assemblies and core alterations because loss of the SGRVS would require supported equipment to be declared non-functional and the TS would dictate required actions. Also, these plant conditions represent the modes to which the plant must be brought if the plant must be shut down.

Continued

BASES

ACTIONS

A.1

With one SGRVS Exhaust Fan non-functional, action must be taken to restore FUNCTIONAL status within 7 days. In this Condition, the SGR room temperature is monitored every four hours to verify that the remaining FUNCTIONAL Exhaust Fans are adequate to maintain the temperature within limits. However, the overall reliability is reduced because three Exhaust Fans are required in the FUNCTIONAL condition to assure no loss of temperature control function at design basis conditions. The 7 day Completion Time is based on the low probability of an event requiring emergency equipment operation, the consideration that the remaining Exhaust Fans can provide the required temperature control without failure, and the monitoring of the SGR Room temperature control.

B.1

If Required Action A.1 or A.2 is not met within the required Completion Time, immediate corrective action must be undertaken and a CR must be written and a CA issued to evaluate return to FUNCTIONALITY.

C.1

If two or more SGRVS Exhaust fans become non-functional, or the Switchgear Room exceeds 104 degrees F, the plant must evaluate the continued operability of the Technical Specification (TS) components that rely on forced air to maintain cooling and equipment qualification. Required actions will be defined by the TS as needed.

SURVEILLANCES

TRS 3.7.I.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load required to maintain temperature control of the SGR during design basis events. This SR consists of a verification of the correct RPM and calculations. The 24 month Frequency is appropriate since significant degradation of the SGRVS is slow and is not expected over this time period.

REFERENCES

1. Drawing 9321-3129, Sheet 4

3.7 PLANT SYSTEMS

3.7.J CCR Air Conditioning System

TRO 3.7.J Two Air Conditioners shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3 and 4, and during movement of recently irradiated fuel.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One air conditioner non-functional.	A.1 Restore train to FUNCTIONAL status.	30 days
B. Required Action and associated Completion Time of A.1 not met	B.1 Issue a CR and, in response to a CA, prepare a corrective action report outlining the cause of the inoperability of required equipment, the extent of condition, and the plans and schedule for restoring the inoperable equipment to FUNCTIONAL status.	5 Days
C Two air conditioners non-functional.	C.1 Evaluate supported Technical Specification components for continued operability.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.7.J.1	Verify each air conditioner has the capability to remove its required heat load	24 months

3.7 PLANT SYSTEMS

B 3.7.J CCR Air Conditioning System

BASES

BACKGROUND

The CCR Air Conditioning System (CRACS) provides temperature control for the Central Control Room during normal operation, and during postulated accident conditions.

The CRACS consists of two air conditioning (A/C) units that provide cooling of the Central Control Room by way of air cooled refrigerant cycle. Unit 2 and Unit 1 have common control rooms. Unit 2 was licensed with one A/C unit designed to cool the common control room. The Unit 2 AC unit has inlet and outlet dampers and both a main and a backup fan. Each fan has a capacity of 9,200 cfm and the main and backup fans are powered from MCC26B, Bus 6A (EDG 23) and MCC 26C, Bus 5A (EDG 22). There is also a by-pass fan supplying 200 cfm of air to the supervisory system control panel exhaust system. The Ventilation System controls the source of air supply and is in TS 3.7.10. The A/C unit is powered from MCC 26B, Bus 6A (EDG 23). During initial licensing the CCR was evaluated (Reference 1 for loss of the Unit 2 A/C and determined to be acceptable. The Unit 2 A/C, fans and dampers are automatically loaded on the EDG. A/C are capable of performing their design function during an accident with an outside air temperature of 93^{o}F.

The Unit 1 A/C unit is operated in recirculation mode and has manual dampers, 2-100% supply fans and 1-100% exhaust fan. The Unit 1 A/C unit and fans are powered from Distribution Panel 10H, Unit 12SA2 and has no diesel. With the A/C Unit operating and the emergency vent exhaust fan on the supervisory control panel operating, the Unit 1 A/C is capable of maintaining an acceptable CCR temperature with an outside air temperature of 93^{o}F.

APPLICABLE SAFETY ANALYSES

The design basis of the CCR Air Conditioning System is to maintain the CCR temperature during normal operation and post accident conditions. Assuming loss of the Unit 2 A/C system the Unit 1 A/C has been evaluated and can maintain the temperature at 104.6^{o}F with normal lights off and the emergency vent exhaust fan on the supervisory control panel operating.

The original design was not required to meet single failure criteria and, does not satisfy all requirements in IEEE-279 for single failure tolerance.

(continued)

BASES

TRO

Two A/C Units of the CRACS are required to be FUNCTIONAL to ensure that at least one is available, assuming a loss of the other A/C. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

The CRACS is considered to be FUNCTIONAL when the individual components necessary to maintain the required temperature are FUNCTIONAL in the Unit 1 and Unit 2 A/C systems. These components include the A/C units, dampers, fans and ductwork identified in the description.

APPLICABILITY

In MODES 1, 2, 3 and 4, the CRACS must be FUNCTIONAL to ensure that the CR temperature will not exceed equipment operational requirements.

The CRACS is not required in MODE 5 or 6, or during movement of irradiated fuel assemblies and core alterations because loss of the CRACS would require supported equipment to be declared non-functional and the TS would dictate required actions. Also, these represent the modes to which the plant must be brought if the plant must be shut down.

ACTIONS

A.1

With one CCR A/C Unit non-functional, action must be taken to restore FUNCTIONAL status within 30 days. In this Condition, the remaining FUNCTIONAL A/C Unit is adequate to maintain the CCR temperature. However, the overall reliability is reduced because a single failure in the FUNCTIONAL A/C Unit could result in loss of temperature control function. The 30 day Completion Time is based on the low probability of an event requiring emergency equipment operation, and the consideration that the remaining train can provide required temperature control without failure.

B.1

If Required Action A.1 is not met within the required Completion Time a CR must be written and a CA issued to evaluate return to FUNCTIONALITY.

C.1

With two CCR/AC Units non-functional, the plant must evaluate the continued operability of Technical Specification (TS) components that rely on CCR/AC Units to maintain cooling and equipment qualification. Required actions will be defined by the TS as needed

(continued)

BASES

SURVEILLANCE REQUIREMENTS

TRS 3.7.J.1

This SR verifies that the heat removal capability of each A/C system is sufficient to remove the heat load required to maintain temperature control. This SR will consist of a combination of maintenance, testing of fan speed or flow rate and calculations to assure heat removal capability met. The 24 month Frequency is appropriate since significant degradation of the Ventilation System is slow and is not expected over this time period. The fans and dampers test requirements are in TS 3.7.10.

REFERENCES

1. FSAR Question 7.19, Supplement 8 dated April 1970.

2. Drawings 138248 and 252665

3.8 ELECTRICAL POWER SYSTEMS

3.8.A Emergency Lighting Panel 218

TRO 3.8.A The circuit breaker on the electrical feeder to emergency lighting panel 218 inside containment shall be locked open.

APPLICABILITY: MODES 1, and 2 except when containment access is required.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Circuit breaker on electrical feeder not locked open.	A.1 Lock open breaker.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
None	NA

3.8 ELECTRICAL POWER SYSTEMS

B 3.8.A Emergency Lighting Panel 218

BASES

As a result of an investigation of the effect components, that might become submerged following a LOCA, may have on ECCS containment isolation, and other safety-related functions, a fuse and a locked-open circuit breaker were provided on the electrical feeder to emergency Lighting Panel 218 inside containment. With the circuit breaker in the open position, containment electrical penetration H-70 is de-energized during the accident condition. Personnel access to containment may be required during power operation. Since it is highly improbable that a LOCA would occur during this short period of time, the circuit breaker may be closed during that time to provide emergency lighting inside containment for personnel safety.

3.8 ELECTRICAL POWER

3.8.B SBO / Appendix R Diesel Generator and Electrical Distribution System

TRO 3.8.B The SBO / Appendix R Diesel Generator and Electrical Distribution System shall be OPERABLE

APPLICABILITY: MODES 1, 2, 3 and 4

----------NOTES----------
1: Portions of the electrical distribution system are also governed by Technical Specification 3.8.
2: TRO 3.0.D is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SBO / Appendix R diesel generator is inoperable.	A.1 Restore the SBO / Appendix R diesel generator to OPERABLE status. OR A.2 Establish an independent power supply	7 days
B. Required Actions and Completion Times of A not met.	B.1 Be in MODE 3 AND B.2 Be in MODE 4 AND B.3 Be in MODE 5.	6 hours 12 hours 36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.8.B.1	Verify the fuel oil storage tank contains $\geq$ 12,500 gallons of usable fuel oil reserved for the diesel.	7 days
TRS 3.8.B.2	Visually inspect the SBO / Appendix R diesel generator support systems, including check of the diesel fuel oil level, the closed cooling water system temperature, battery and battery charger.	7 days
TRS 3.8.B.3	Verify individual battery voltage >= 12V	31 days
TRS 3.8.B.4	Verify the battery charger output voltage >= 24V and output current <= 2Amps	31 days

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
TRS 3.8.B.5	Start and run the SBO / Appendix R diesel generator for a period of time sufficient to reach stable operating temperatures. Demonstrate proper operation of the output breaker.	92 days
TRS 3.8.B.6	Sample and analyze fuel oil for the SBO / Appendix R Diesel to ensure applicable standards are met.	184 days
TRS 3.8.B.7	Start the SBO / Appendix R diesel generator, load it between 2335 to 2435 kW, and run for at least 2 hours.	24 months
TRS 3.8.B.8	DEMONSTRATE the ability to line up and provide power from the SBO / Appendix R diesel to the Appendix R Bus loads, to the SBO Bus loads, and to Unit 3 Appendix R / SBO diesel bus loads within 60 minutes. Validate the ability to transfer SBO /Appendix R EDG cooling from City Water to Service Water within 2 hours.	24 months
TRS 3.8.B.9	DEMONSTRATE the governor circuitry operates properly in unit.	24 months

3.8 ELECTRICAL POWER

B 3.8.B SBO / Appendix R Diesel Generator and Electrical Distribution System

BASES

BACKGROUND

10CFR50 Appendix R requires that alternative or dedicated shutdown capability provided for a specific fire area shall be able to achieve and maintain subcritical reactivity conditions in the reactor, maintain reactor coolant inventory, achieve and maintain hot standby conditions, achieve cold shutdown within 72 hours and maintain cold shutdown conditions thereafter. 10 CFR 50.63 requires the plant to be able to withstand a station blackout (SBO), as defined in 10 CFR 50.2, using an alternate AC power supply. IP2 elected to install a SBO / Appendix R diesel generator and associated switchgear necessary to achieve and maintain cold shutdown conditions independent of the normal safeguards and instrumentation power supplies and to function as the alternate ac power supply operated from outside the Control Room.

APPLICABLE SAFETY ANALYSIS

The Indian Point Unit 2 alternative shutdown capability consists of an arrangement of 6.9KV and 480V ac switchgear, 480V ac motor control centers, power cables, 480V ac power transfer switches, 120V ac distribution panels, instrument isolation and power cabinets, local instrument indication cabinets and associated instrument cables designed to provide an alternative safe shutdown capability. The Appendix R diesel power system is designed to be independent and sufficiently isolated from the existing emergency power system to ensure the availability of power to the safe shutdown pumps and instruments of concern in the event of fires.

The SBO / Appendix R Diesel also supports compliance with Station Blackout (SBO) rule. The new alternate AC power supply meets the criteria (Reference 1) because the power supply and distribution is protected from severe weather (shielded by structures or buried), support services (e.g., air and DC) are independent, it is well in excess of the approximately 2,072 KW identified in the SBO SER (Reference 2), system reliability will be maintained at 0.95 using NSAC-108 methodology, and the unit is capable of being started and loaded within one hour. It is not required to be started from the Control Room to meet this.

The output of the generator is connected to the SBO/APP. R 13.8 kV Switchgear bus via circuit breaker SBO/ASS, located at the DG Breaker Switchgear. The SBO/APP. R 13.8 kV Switchgear section has two feeder circuit breakers, ASS for alternate safe shutdown and SBOH for station blackout. The ASS breaker feeds the existing Unit No. 1, 13.8 kV L&P Bus Section 3 through breaker B3-3 in order to provide power to Alternate Safe Shutdown System loads through transformers to 440 volt switchgear 12FD3 and 12RW3, and the 480V Duraline Substation. These loads consist of:

- One charging pump (#23)
- One component cooling water pump (#23)
- One service water pump (#23 or 24)
- One channel of essential process monitoring instrumentation
- One RHR pump (through post-fire repairs)
- One Auxiliary Feedwater pump (#21)
- One Containment Recirculation Fan (#22) (through post-fire repair)

The SBOH breaker feeds the SBO transformer (13.8 kV - 6.9 kV, 3750 KVA transformer), that in turn feeds the 6.9 kV Busses 5 and 6 via the SBOL circuit breaker. Breaker OSP is to provide 13.8 kV alternate offsite power (second source) to the station via the autotransformer.

Supporting services for this on-site ac power source are provided independent of the supporting equipment used by the three emergency diesel generators (e.g., cooling water, DC power, starting air, ventilation and fuel oil).

BASES

TRO

The SBO / Appendix R diesel generator must be operable to provide an independent source of power to alternate safe shutdown pumps and instrumentation as well as SBO equipment and instrumentation. An OPERABLE SBO / Appendix R diesel generator consists of the diesel generator, support equipment such as starting batteries, fuel oil, cooling water, as well as the electrical distribution system.

APPLICABILITY

10CFR50 Appendix R requires that one train of equipment necessary to achieve MODE 3 from either the control room or emergency control station(s) must be maintained free of fire damage by a single fire including an exposure fire. With the Appendix R diesel or its electrical distribution system inoperable, this condition cannot be met for specific fires. The SBO events are postulated during plant operations and coping studies are performed for conditions at power. Therefore the TRO requirements for Appendix R are controlling. Therefore the SBO / Appendix R diesel is required prior to going above MODE 5.

This Technical Requirement allows changes in operating MODE while relying on Required Actions. Allowance of this exception to TRO 3.0.D is based on the low probability of an event requiring the use of such systems and reasoning that such systems can generally be repaired during plant operation without a significant risk of a spurious plant trip.

ACTIONS

A. With the Appendix R diesel and/or the associated equipment required line-up to the 13.8 kV Bus inoperable, these systems must be restored to OPERABLE status within 7 days or an independent power supply meeting current requirements must be made available. The allowable Outage Time (AOT) is the same as the AOT approved by the NRC for compliance with SBO / App R prior to TS relocation. The Unit 3 Appendix R / SBO Diesel Generator has the capability of providing power to the IP2 ASSD loads in case of fire or SBO loads, with a concurrent loss of offsite power (LOOP) per calculations IP-CAL-08-00079 and IP-CAL-08-00023, respectively. The NRC requirements only require a SBO or Appendix R fire in one unit at a two unit site so the use of the Unit 3 Appendix R / SBO diesel as an independent power supply is acceptable. TRS 3.8.B.8 demonstrate the ability to perform the required lineups in the required time frames so that functionality is assured. However, the Unit 3 Appendix R / SBO diesel is not designed for the same criteria (i.e., wind and missiles) so it is limited as an independent power supply to performing the function should Unit 2 Appendix R / SBO diesel be out of service.

B. If the requirements of Conditions A, B, C are not met within the allowed outage time, then compliance with 10CFR50 Appendix R and 10 CFR 50.63 are not met. The plant must be placed in a condition where these requirements are not applicable and therefore the plant must be placed in MODE 5. The time requirement of 6 hours for MODE 3, 12 hours for Mode 4 and 36 hours for MODE 5 is selected to be consistent with the NRC requirements previously approved for gas turbines and found in the prior revision of this TRM.

SURVEILLANCE REQUIREMENTS

TRS 3.8.B.1 The Appendix R diesel uses 172 gallons of fuel per hour when loaded at peak capacity. The Appendix R event requires the Appendix R Diesel to run for 72 hours. Therefore there must be $\geq$ 12,500 gallons of usable fuel in the tank dedicated to the diesel. This fuel is normally supplied from the storage tank in Unit 1 Turbine Building. Other fuel oil may be credited where adequate time to refuel exists.

BASES

SURVEILLANCE REQUIREMENTS (continued)

TRS 3.8.B.2 Inspect the SBO / Appendix R diesel generator support systems, including check of the diesel fuel oil level, the closed cooling water system temperature, battery and battery charger. This surveillance is consistent with industry practice. When the battery is checked it should be looked at for unacceptable signs such as cracking, bulging, corrosion, leakage, or an electrolyte level not above the plates.

TRS 3.8.B.3 This Surveillance verifies the batteries are maintained at 12 V. The capability of the batteries to perform a function is established when they are used to start the SBO / Appendix R diesel every quarter.

TRS 3.8.B.4 This surveillance establishes that the battery charger is operating at the required parameters to support the battery.

TRS 3.8.B.5 Start and run the SBO / Appendix R diesel generator for a period of time sufficient to reach stable operating temperatures. DEMONSTRATE the proper operation of the output breaker. Starting and bringing the SBO / Appendix R diesel to operating conditions on a quarterly frequency is consistent with the Alternate AC Power Criteria identified in Appendix B section of NUMARC 87-00, "Guidelines and Technical Bases For NUMARC Initiatives."

TRS 3.8.B.6 The surveillance to sample and analyze fuel oil from dedicated bulk storage according to applicable standards meets the Alternate AC Power Criteria identified in Appendix B section B8(c) of NUMARC 87-00, "Guidelines and Technical Bases For NUMARC Initiatives." The frequency of once per 6 months is deemed sufficient.

TRS 3.8.B.7 Start the SBO / Appendix R diesel generator, line it up and load it between 2335 to 2435 kW, and run for at least 2 hours. Starting and loading the Appendix R diesel to rated capacity on a refueling frequency is consistent with the Alternate AC Power Criteria identified in Appendix B section B10 of NUMARC 87-00, "Guidelines and Technical Bases For NUMARC Initiatives."

TRS 3.8.B.8 DEMONSTRATE the ability to line up and provide power within 60 minutes from the SBO / Appendix R diesel to the Appendix R loads and SBO loads. This includes lineup through either the ASS breaker to the 12 FD3 and 12 RW3 switchgear or the SBOH breaker to the SBO 13.8kV – 6.9kV transformer to breaker SBOL and then the SBO /APP switchgear. These demonstrations may be made through a combination of tests and simulated actions. The time to identify the necessity for the SBO / Appendix R diesel must be estimated and then the time to initiate actions to line up and provide power must be demonstrated. For the Appendix R event, the demonstration must include the ability to transfer from the cooling water of the CWST to the service water cooling. This transfer must be demonstrated to be made within two hours to assure adequate city water (see Reference 3). DEMONSTRATE the ability to line up and provide power to the Unit 3 Appendix R diesel loads. This demonstrates the ability to provide backup power. This demonstration may be made through a combination of tests and simulated actions.

TRS 3.8.B.9 Start the SBO / Appendix R diesel and operate in unit to test the circuitry of the governor and its ability to control the SBO / Appendix R diesel. This recognizes the separate circuitry in this mode.

BASES

REFERENCES

1. NUMARC 87-00,"Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors," Appendix B
2. NRC letter of November 21, 1991 regarding Safety Evaluation of SBO Response (TAC M68556)
3. EC 5000033794, "IP2 Station Blackout and Appendix R Diesel Generator Set"
4. Risk Assessment for Extending the Proposed IP2 Appendix R Diesel Generator (ARDG) AOT

3.8 ELECTRICAL POWER

3.8.C Technical Support Center (TSC) Diesel Generator and TSC Plant Computer Uninterruptible Power Supply (UPS)

TRO 3.8.C The TSC Diesel Generator and TSC Plant Computer UPS shall be OPERABLE:

APPLICABILITY: MODES 1, 2, 3 and 4.

- NOTE -

TRO 3.0.C is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TSC Diesel Generator or TSC Plant Computer UPS inoperable.	A.1 Restore TSC Diesel Generator and TSC Plant Computer UPS to OPERABLE.	6 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Issue a CR and, in response to a CA, prepare a corrective action report outlining the cause of the inoperability of required equipment, the extent of condition, and the plans and schedule for restoring the inoperable equipment to OPERABLE status.	7 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.8.C.1	Inspect TSC Diesel Generator Battery. Battery Bank Voltage $\geq$ 24 VDC Electrolyte level between Min & Max Physical Condition Satisfactory.	31 days
TRS 3.8.C.2	Verify TSC Diesel Generator starts.	92 days
TRS 3.8.C.3	Verify TSC Diesel Generator starts and accepts load.	12 months
TRS 3.8.C.4	$\geq$ 2500 Gallons of Fuel Oil in Ignition Tank #11 Reserved for the TSC Diesel Operation.	7 days

3.8 ELECTRICAL POWER

B 3.8.C Technical Support Center (TSC) Diesel Generator and TSC Plant Computer Uninterruptible Power Supply (UPS)

BASES

BACKGROUND

NUREG-0696, "Functional Criteria for Emergency Response Facilities" (Reference 1) describes the facilities and systems to be used to improve responses to emergency situations. The facilities include the Control Room, onsite Technical Support Center (TSC), onsite Operational Support Center (OSC), and nearsite Emergency Operations Facility (EOF). Data systems are the safety parameter display system (SPDS) and nuclear data link (NDL). Together, these facilities and systems make up the total Emergency Response Facilities (ERFs).

NUREG-0696 provides the following guidance: "Sufficient alternate or backup power sources shall be provided to maintain continuity of TSC functions and to immediately resume data acquisition, storage, and display of TSC data if loss of the primary TSC power sources occurs." The TSC Diesel Generator and TSC Plant Computer Battery UPS serve as these backup power sources.

The requirement to have a TSC comes from NUREG-0654 (Reference 2) and Article IV.E.8 of 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities" (Reference 3). NUREG-0654 requires that each licensee establishes a Technical Support Center and an onsite Operations Support Center (assembly area) in accordance with NUREG-0696, Revision 1. Article IV.E of 10 CFR 50, Appendix E requires that adequate provisions are made and described for emergency facilities and equipment. Item 8 of article IV.E requires, "A licensee onsite technical support center and a licensee near-site emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency."

TRO

The TSC Diesel Generator and TSC Plant Computer Battery must be OPERABLE to provide backup power to the TSC facility if loss of the primary TSC power source occurs.

APPLICABILITY

The TSC Diesel Generator and TSC Plant Computer UPS are required to be OPERABLE during all plant operating conditions above MODE 5 in accordance with NUREG-0696.

BASES

ACTIONS A.1

The inoperability of the TSC Diesel Generator or TSC Plant Computer UPS does not constitute a major loss of emergency assessment capability, and does not require notifying the NRC Operations Center via the Emergency Notification System in accordance with 10CFR50.72 (b)(1)(v). As noted in NUREG-0696, the TSC is one of the facilities that make up the total emergency response facilities (ERFs). Code of Federal Regulations 10CFR50.72 (b)(3)(xiii) requires an eight hour report for any event that results in a major loss of emergency assessment capability, or communications capability (e.g., significant portion of control room indication, Emergency Notification System, or offsite notification system). There is no corresponding Part 50.73 requirement. Therefore, no Licensee Event Report is required.

B.1

Operations tracks equipment operability and action statements. When Condition B is entered, a CR must be written and a CA issued to evaluate return to FUNCTIONALITY. The 7 day completion time was chosen because it is assumed that for the first 6 days, efforts were concentrated on returning the equipment to OPERABLE. Seven additional days is sufficient time to issue the CR and CA. At the end of the additional seven days, the availability goal for the TSC data system has been exceeded by two times. The CA should address the impact that the inoperable condition has had upon the availability goal.

SURVEILLANCE REQUIREMENTS TRS 3.8.C.1

A check of battery bank float voltage, cell electrolyte level, and battery physical condition is performed to ensure overall battery condition is adequate to support the TSC Diesel Generator. This program is implemented in accordance with PT-M67. Battery Bank voltage $\geq$ 24 VDC Electrolyte level Between Min & Max Physical Condition Satisfactory.

TRS 3.8.C.2

The TSC Diesel Generator is started and run unloaded for a minimum time to inspect diesel systems to ensure engine will start for availability. This requirement is implemented in accordance with PT-M67.

BASES

SURVEILLANCE REQUIREMENTS (continued)

TRS 3.8.C.3

The TSC Diesel Generator is started and run under load to verify generator operation and output breaker operation. This requirement is implemented in accordance with 2-PT-A046.

TRS 3.8.C.4

≥2500 Gallons of Fuel Oil in Ignition Tank #11 Reserved for the TSC Diesel Operation. This TRS is satisfied by the Operator rover rounds which verifies there is > 4250 gallons of fuel oil in ignition tank #11, 2500 gallons of which is reserved for operation of the TSC diesel for 48 hours. The 48 hrs. of operating time that 2500 gallons of fuel affords is sufficient time to bring in an alternate supply of fuel oil by tanker truck as required ref. SOP 29.19.

REFERENCES

1. NUREG-0696, "Functional Criteria for Emergency Response Facilities," Published February 1981.

2. NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

3. Code of Federal Regulations 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."

4. NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73."

3.9 REFUELING OPERATIONS

3.9.A Decay Time — Refueling

TRO 3.9.A The reactor shall be subcritical for ≥ 84 hours during movement of irradiated fuel assemblies in the reactor.

APPLICABILITY: During movement of irradiated fuel assemblies in the reactor.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Movement of irradiated fuel assemblies in the reactor with the reactor subcritical ≤ 84 hours.	A.1 Suspend movement of irradiated fuel assemblies in the reactor.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.9.A.1	Verify the reactor has been subcritical ≥ 84 hours.	Once prior to the movement of irradiated fuel in the reactor

3.9 REFUELING OPERATIONS

B 3.9.A Decay Time - Refueling

BASES

BACKGROUND

The analysis of the radiological consequences of a fuel handling accident (FHA) is based on the assumption that the decay time of the spent fuel and decontamination by the water above the damaged fuel are the primary methods for mitigating a fuel handling accident. By prohibiting movement of irradiated fuel in the reactor until the reactor has been subcritical for at least 84 hours, this TRO ensures assumptions regarding decay time are met for fuel movement in containment and the FSB.

APPLICABLE SAFETY ANALYSES

The IP2 analysis of the radiological consequences of an FHA is based on the source term methodology from NUREG-1465, “Accident Source Terms for Light-Water Nuclear Power Plants,” (Ref. 1) and applies the criteria of 10 CFR 50.67, “Accident Source Term,” (Ref. 2) for the evaluation of the consequences of the FHA. This approach takes credit for the alternate source term and is based on the assumption that the decay time of the spent fuel and decontamination by the water above the damaged fuel are the primary methods for mitigating a fuel handling accident. Specifically, the FHA analysis assumed that the damaged fuel assembly has not been part of a critical reactor for at least 84 hours prior to the event. Additionally, the FHA analysis assumed that decontamination factor for removal of fission products based on a minimum level of 23 feet of water above the reactor pressure vessel flange for an FHA in containment and on a minimum level of 23 feet of water above the spent fuel racks for an FHA in the FSB.

If the analysis assumptions for the FHA in containment are met (i.e., 84 hour fuel decay time and 23 feet of water above the reactor vessel flange), then the radiological consequences of the FHA were determined to be within the limits of 10 CFR 50.67 without reliance on other mitigating systems. Specifically, the analysis assumed that:

a. Activity from the damaged fuel assembly is released to the outside atmosphere through the containment purge system without taking any credit for either isolation or filtration by HEPA or charcoal filters in the release path;

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. Containment personnel air locks and the equipment hatch are open to atmosphere; and,

c. Control room air filtration system is in its normal operating mode with no credit for the control room boundary or filtration by HEPA or charcoal filters.

If the analysis assumptions for the FHA in the FSB are met (i.e., 84 hour fuel decay time and 23 feet of water above the top of the spent fuel racks), then the radiological consequences of the FHA were determined to be within the limits of 10 CFR 50.67 without reliance on other mitigating systems. Specifically, the analysis assumed that:

a. Activity from the damaged fuel assembly is released to the outside atmosphere through the FSB ventilation system without taking any credit for FSB building integrity or isolation or filtration by HEPA or charcoal filters in the release path; and,

b. Control room air filtration system is in its normal operating mode with no credit for the control room boundary or filtration by HEPA or charcoal filters.

The results of the IP2 FHA analysis are summarized in Reference 3. In addition to FHA dose consequence considerations, decay time is administratively controlled by operating procedures to ensure that fuel pool temperatures and time-to-boil limits are met. (References 3 and 4)

Decay time satisfies the requirements of Criterion 2 of 10 CFR 50.36(c)(2)(ii).

TRO

This TRO requires the reactor to be subcritical for at least 84 hours prior to any movement of irradiated fuel in the reactor vessel. This ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products, thus reducing the fission product inventory and reducing the effects of a refueling accident.

APPLICABILITY

This decay time restriction is applicable only during movement of irradiated fuel in the reactor following reactor operation. Therefore, it effectively prohibits movement of irradiated fuel in the reactor vessel during the first 84 hours following reactor shutdown.

BASES

ACTIONS

A.1

With the reactor subcritical less than 84 hours, all movement of irradiated fuel in the reactor vessel must be suspended. As stated above, movement of irradiated fuel in the reactor vessel is prohibited during the first 84 hours following reactor shutdown.

SURVEILLANCE REQUIREMENTS

TRS 3.9.A.1

verification that the reactor has been subcritical for at least 84 hours must be made prior to movement of irradiated fuel in the reactor vessel. This is done by confirming the time and date that the reactor was made subcritical, and verifying that at least 84 hours have elapsed. The Frequency of "once prior to movement of irradiated fuel in the reactor vessel" ensures that the operation is within the design basis assumption for decay time in the refueling accident analysis.

REFERENCES

1. NUREG-1465, “Accident Source Terms for Light-Water Nuclear Power Plants,” June 1, 1992.

2. 10 CFR 50.67, “Accident Source Term.”

3. Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 241 to Facility Operating License No. DPR-26, October 27, 2004.

4. IP2 UFSAR Section 9.3.1.2.3, Spent Fuel Pit Cooling Loop.

3.9 REFUELING OPERATIONS

3.9.B Refueling with the Reactor Vessel Head Bolts Less Than Fully Tensioned

TRO 3.9.B Each of the following shall be OPERABLE:

a. Containment purge supply, exhaust and pressure relief isolation valves, including the radiation monitors which initiate isolation;

b. Minimum RCS boron concentration;

c. Direct communication between the control room and the refueling cavity manipulator crane shall be available whenever changes in core geometry are taking place;

d. Equipment door or closure plate that restricts air flow from the containment; and

e. Radiation levels in the containment shall be monitored continuously.

APPLICABILITY: MODE 6 and when heavy loads > 2300 lbs (except for installed crane systems) are being moved over the reactor with the reactor vessel head removed.

- NOTE -

Separate Condition entry is allowed for each required isolation valve.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment purge supply, exhaust or pressure relief with isolation valve(s) inoperable	A.1 Repair isolation valve AND A.2 Demonstrate operability of remaining isolation valve(s) on the line with inoperable isolation valve(s).	4 Days 1 Day

CONDITION		REQUIRED ACTION	COMPLETION TIME
B. Any Containment purge supply, exhaust or pressure relief line penetrating containment with all isolation valves inoperable, or the radiation monitors which initiate isolation inoperable. Or Required action and associated completion time of Condition A.1 or A.2 not met		----------NOTE---------- Suspension of operations shall not preclude completion of movement of components to a safe conservative position. ---------- B.1 Suspend fuel movement. <u>AND</u> B.2 Lock closed an inoperable isolation valve or another valve in series.	 Immediately Prior to resuming fuel movement
C. TRO 3.9.B.b, c, d, or e not met.	C.1	---------- **- NOTE -** Suspension of operations shall not preclude completion of movement of components to a safe conservative position. ---------- Suspend all operations.	 Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.9.B.1	Verify, by chemical analysis, RCS boron concentration is more restrictive of either $\geq$ 2050 ppm or sufficient to provide a shutdown margin of $\geq$ 5% Δk/k.	24 hours
TRS 3.9.B.2	Verify containment purge supply, exhaust and pressure relief isolation valves are operable and isolate on a radiation monitor signal.	Once prior to initial movement of the reactor vessel head.

SURVEILLANCE		FREQUENCY
TRS 3.9.B.3	Verify direct communications between the control room and the refueling cavity manipulator crane	Once every 12 hours during core geometry changes.
TRS 3.9.B.4	Equipment door or closure plate that restricts air flow from the containment is properly installed.	Once prior to initial movement of the reactor vessel head.

3.9 REFUELING OPERATIONS

B 3.9.B Refueling with the Reactor Vessel Head Bolts Less Than Fully Tensioned

BASES

The lines penetrating containment that provide a direct path from containment atmosphere to the outside are the containment purge supply, exhaust and pressure relief piping. A single isolation valve is adequate for closure since no single failure is postulated.

For purposes of meeting containment closure requirements, the roll-up door is an acceptable equivalent to the closure plate for Reactor Vessel Head and Upper Internals Transport.

3.9 REFUELING OPERATIONS

3.9.C Fuel Storage and Operations With Irradiated Fuel in the Spent Fuel Pit

TRO 3.9.C Spent Fuel Pit water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: Anytime the spent fuel pit contains irradiated fuel.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Spent fuel water level less than required.	A.1	Suspend all movement of fuel assemblies in the spent fuel storage pit.	Immediately
	AND		
	A.2	Suspend crane operations with loads over the spent fuel in the spent fuel pit.	Immediately
	AND		
	A.3	Restore water level to within limit.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.9.C.1	Verify spent fuel pit level ≥ 23 ft above the top of irradiated fuel.	30 days

3.9 REFUELING OPERATIONS

B 3.9.C Fuel Storage and Operations With Irradiated Fuel in the Spent Fuel Pit

BASES

The spent fuel cask shall only be moved over the spent fuel pit using the Ederer 110 ton single failure proof gantry crane approved by the NRC under License Amendment #224. Any load in excess of the nominal weight of a spent fuel storage rack and associated handling tool shall not be moved on or above El. 95' in the Fuel Storage Building unless handled by the single failure proof 110 ton gantry crane. Loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool shall not be moved over spent fuel in the spent fuel pit. The weight of installed crane systems shall not be considered part of these loads.

SURVEILLANCE REQUIREMENTS

TRS 3.9.C.1

Verifying spent fuel pit level every 30 days is acceptable based on observation of the Control Room annunciators. The spent fuel pit Control Room alarm is set greater than 24 feet above the top of the fuel assemblies. Therefore the absence of the alarm provides assurance the spent fuel pit level is adequate and the additional foot of level provides time to increase level to meet the 23 feet requirement.

3.9 REFUELING OPERATIONS

3.9.D Refueling Operations In The Spent Fuel Storage Area

TRO 3.9.D The spent fuel bridge refueling crane shall be OPERABLE.

APPLICABILITY: When fuel or heavy loads are being moved in the spent fuel storage area.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The spent fuel bridge refueling crane is INOPERABLE.	--- **- NOTE -** Suspension of operations shall not preclude completion of movement of components to a safe conservative position. --- A.1 Suspend all operations.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRS 3.9.D.1	Perform dead-load test with a load equal to or greater than the maximum load to be assumed, on the spent fuel pit bridge refueling crane.	Once prior to movement of fuel or heavy loads.
TRS 3.9.D.2	--- **- NOTE -** To be performed after TRS 3.9.D.1 is complete. --- Visually inspect the spent fuel pit bridge refueling crane.	Once prior to movement of fuel or heavy loads.

3.9 REFUELING OPERATIONS

B 3.9.D Refueling Operations In The Spent Fuel Storage Area

BASES

SURVEILLANCE REQUIREMENTS

TRS 3.9.D.1

The load assumed by the refueling crane for this test must be equal to or greater then the maximum load to be assumed by the crane during the refueling operation.

3.9 REFUELING OPERATIONS

3.9.E Ederer Gantry Crane

TRO 3.9.E The 110 ton Ederer Gantry Crane shall be OPERABLE.

APPLICABILITY: When moving spent fuel casks up to 110 tons into and out of the spent fuel pit in the fuel storage building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. 110 ton Ederer gantry crane is INOPERABLE	A.1 NO dry cask storage cask handling can proceed.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
TRS 3.9.E.1 Perform maintenance, testing and inspection activities in accordance with Chapter 2-2 of ANSI B30.2-1976.	As required by the ANSI Standard modified by NUREG 612 Section 5.1.1(6).

3.9 REFUELING OPERATIONS

B 3.9.E Ederer Gantry Crane

BASES

Background

License Amendment #244 allowed the use of a new single-failure-proof crane for moving spent fuel casks up to 110 tons in weight (when fully loaded with fuel) into and out of the spent fuel pit. These are to allow transfer of spent fuel to the independent spent fuel storage installation (ISFSI). The Holtec HI-STORM® 100 cask system has been selected for use at the ISFSI. The HI-STORM® cask system utilizes the HI-TRAC®100 transfer cask for transporting a multi-purpose canister (MPC) from the spent fuel pit, and for inter-cask MPC transfers required for on-site storage.

The amendment allows the use of the 110-ton design rated gantry crane to move spent fuel casks up to 110 tons into and out of the spent fuel pit by lifting a fully loaded Holtec HI-TRAC® 100 spent fuel transfer cask and its associated components. The existing 40-ton non-single-failure-proof overhead crane, located in the IP2 fuel storage building (FSB), does not have the capacity to handle the HI-TRAC® 100 transfer cask and its associated components, but will remain in place after the installation of the new crane. However, this crane is restricted from handling casks over spent fuel in the spent fuel pit and will only be utilized for other loading activities in the FSB.

The gantry crane main hoist has a capacity of 110 tons maximum critical load (MCL) to handle the HI-TRAC100®transfer cask, while an auxiliary hoist rated at 45 tons MCL will be used to handle ancillary components associated with the HI-STORM® 100 cask system. The crane will not be inadvertently used for unintended purposes (e.g. lifting fuel elements from the spent fuel racks.) The new gantry crane was specifically designed to handle the Holtec HI-TRAC® 100D and MPC-32, and both the 110-ton and the 45-ton hoists were designed to mate only with the HI-TRAC® trunnions and MPC lift cleats, respectively.

TRO

The Ederer Gantry Crane is operable when the licensing bases are met. The Ederer Crane will only be moved on safe load paths. Gantry crane operating procedures utilized for cask and cask component lifts will be prepared to include: the steps and proper sequence to be followed in handling the load; defining the safe load path; and other precautions. A specific cask loading and handling procedure will provide additional details for controlled movement during cask handling operations. Crane operators will receive training that includes provisions of Chapter 2-3 of American National Standards Institute (ANSI) standard B30.2-1976. In addition,

completion of a crane specific on-the-job training qualification card is required.

ACTIONS

Before any heavy load is lifted the Ederer Crane should be operable. If at any time the crane becomes inoperable, the lifting should cease immediately after the load is in a safe condition.

SURVEILLANCE

TRS 3.9.E.1

Performance of maintenance, testing and inspection activities in accordance with Chapter 2-2 of ANSI B30.2-1976 assures that the Ederer crane maintains the required capability and level of safety. NUREG-0612 Section 6.1.1(6) requires that test and inspections be performed prior to use where it is not practical to meet the frequencies of ANSI B30.2 for periodic inspection or test or where frequency of crane use is less than the specified inspection and test frequency (e.g., the polar crane inside a PWR containment may only be used every 12 to 18 months during refueling operations, and is generally not accessible during power operations. ANSI B30.2, however, calls for certain inspections to be performed daily or monthly. For such cranes having limited usage, the inspections, test, and maintenance should only be performed prior to their use.)

3.10 BEYOND DESIGN BASES COMPONENTS

3.10.A Diverse and Flexible Coping Strategies (FLEX) Equipment

TRO 3.10.A The FLEX equipment specified in TRM Table 3.10.A-1 shall be FUNCTIONAL:

APPLICABILITY: At all times.

----------NOTE----------
Separate Condition entry is allowed for each component.

TR0 3.0.D.c is applicable

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more FLEX components specified in TRM Table 3.10.A-1 does not meet the Column 2 FUNCTIONAL requirements.	A.1 Restore the FLEX component to Column 2 FUNCTIONAL status AND A.2 If not restored within 15 days, present a report to OSRC giving why out of service and plan to repair	90 days 14 days
B. Action A.1 completion time not met. OR One or more FLEX components specified in TRM Table 3.10.A-1 does not meet the Column 2 FUNCTIONAL requirements during a forecast site specific external event.	B.1 Initiate actions to supplement the FLEX component with alternate suitable equipment	Immediately
C. One or more FLEX components specified in TRM Table 3.10.A-1 does not meet the Column 1 FUNCTIONAL requirements.	C.1 Restore site FLEX capability to Column 1 FUNCTIONAL status	24 hours
D. Required Action and associated Completion Time of Condition C not met	D.1 Initiate actions to Implement compensatory measures	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Not Controlled per TRM	

TRM Table 3.10.A-1

FLEX EQUIPMENT THAT DIRECTLY PERFORMS A FLEX MITIGATION STRATEGY FOR THE KEY SAFETY FUNCTIONS

COMPONENT	NUMBER REQUIRED TO SUPPORT FLEX STRATEGIES (Column 1)	NUMBER TO MEET FLEX SPARE REQUIREMENTS (Column 2)
600KW FLEX Diesel Generator(1) (FLEX-PDG-1C / FLEX-PDG-1B)	1	2
RCS Inventory Makeup Pump(1) (FLEX-P-1C / FLEX-P-1B)	1	2
SFP Makeup Pump (FLEX-P-2C / FLEX-P-2B)	1	2
Steam Generator Makeup Pump(1) (FLEX-P-3C / FLEX-P-3B)	1	2
CST Makeup Pump(1)with spool piece (FLEX-P-4C / FLEX-P-4B)	1	2

(1) Component FUNCTIONALITY is NOT required if reactor pressure vessel is defueled

3.10 BEYOND DESIGN BASES COMPONENTS

B 3.10.A Diverse and Flexible Coping Strategies (FLEX) Equipment

BASES

BACKGROUND NRC Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for beyond-Design-Basis External Events," required plants to provide mitigating strategies and associated equipment for an extended loss of power following design basis events or conditions. This was in partial response to the March 2011 Fukushima accident. NRC endorsed NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" as an acceptable approach for satisfying the requirements of Order EA-12-049. TRM Section 3.10.A directly implements the requirements contained in Section 11.5 of NEI 12-05 for portions of the FLEX equipment listed in Table 3.10.A-1.

TRO The equipment to meet Column 2 requirements are required to be FUNCTIONAL at all times to assure redundancy of function. This meets the FLEX N+1 requirements with spare (+1) equipment which is shared with IP3 (i.e., one spare component meets the +1 requirement for both units). Loss of any piece of equipment would be treated as loss of the spare equipment (neither unit would meet N+1) and would require both units to enter an action. The connection to the CST is a spool piece. Required actions would meet the requirements for both units.

APPLICABILITY A beyond design basis event could occur regardless of operational MODE and there will be a need for the equipment as defined in procedures. A Note indicates that TRO 3.0.D.c is applicable so that MODE changes can be made while in an action statement since the risk of a beyond design basis event is the same for all modes.

ACTIONS The Conditions, Required Actions, and Completion Times are in accordance with Section 11.5 of NEI 12-06. Potential compensatory measures which may be considered include use of suitable alternate equipment rented from offsite. When installed plant equipment which supports FLEX strategies becomes unavailable, then the FLEX strategy affected by this unavailability does not need to be maintained during the unavailability. However, if the FLEX

ACTIONS (continued)

strategy uses specific FLEX equipment, then TRM Conditions for that equipment needs to be entered since the support function is lost.

A.1 and A.2

The equipment to meet Column 2 FUNCTIONAL requirements can be out of service for up to 90 days provided the redundant equipment is functional. An additional action is added to report to OSRC in two weeks if corrective action is not completed within 15 days. This provides added management of oversight of the restoration process.

B.1

Compensatory actions must be taken if the equipment to meet Column 2 FUNCTIONAL requirements is not expected to be restored or is not restored within 90 days. Action is required to be initiated immediately since adequate time exists to determine the scope of the compensatory action and completion should be practical within a limited time. If the potential for a site specific external event is identified, action should be initiated to restore redundancy immediately.

C.1

If the equipment to meet Column 1 FUNCTIONAL requirements become non-functioning then initiate actions to restore one of the redundant pieces of equipment within 24 hours.

D.1

If the equipment to meet Column 1 FUNCTIONAL requirements cannot be restored in 24 hours after the redundant components become non-functioning, then initiate actions immediately to implement compensatory actions. The completion of this activity should reflect the need to quickly restore the function.

SURVEILLANCE REQUIREMENTS

In accordance with NEI 12-06, Section 11.5 Periodic testing and frequency should be determined based on equipment type and expected use. Testing should be done to verify design requirements and/or basis. The basis should be documented and deviations from vendor recommendations and applicable standards should be justified. This activity is not controlled by the TRM.

3.10 BEYOND DESIGN BASES COMPONENTS

3.10.B FLEX Fluid and Electrical Connections

TRO 3.10.B The FLEX Fluid and Electrical Connection Components Required to Implement the FLEX Strategy when the FLEX Equipment is connected at the point specified in TRM Table 3.10.B-1 shall be FUNCTIONAL:

APPLICABILITY: At all times.

----------NOTE----------
Separate Condition entry is allowed for each component.

TRO 3.0.D.c is applicable

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The Primary OR Secondary Connection Point or one or more Safety Functions / FLEX components specified in TRM Table 3.10.B-1 is not FUNCTIONAL.	A.1 Restore the FLEX Connection Point to FUNCTIONAL status. AND A.2 If not restored within 15 days, present a report to OSRC giving why out of service and plan to repair	90 days 14 days
B. Action A.1 completion time not met. <u>OR</u> One or more FLEX connection components specified in TRM Table 3.10.B-1 is not FUNCTIONAL during a forecast site specific external event.	B.1 Initiate actions to supplement the FLEX Connection Point with an additional Connection Point that meets the requirements of NEI 12-06 including diversity.	Immediately
C. The Primary and Secondary Connection Points for one or more Safety Functions/FLEX components specified in TRM Table 3.10.B-1 are not FUNCTIONAL.	C.1 Initiate actions to restore site FLEX capability	24 hours

D. Required Action and associated Completion Time of Condition C not met	D.1 Initiate action to implement compensatory measures	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Not Controlled per TRM	

TRM Table 3.10.B-1

FLEX CONNECTIONS THAT DIRECTLY PERFORM A FLEX MITIGATION STRATEGY FOR THE KEY SAFETY FUNCTIONS

SAFETY FUNCTION/FLEX COMPONENT	PRIMARY CONNECTION POINT	SECONDARY CONNECTION POINT
Maintain Core Cooling / Steam Generator Makeup Pump Suction(1)	CST FLEX Connections	PWST, FWST(300KFPT) FLEX Connections (At Least One of Two Tank's Connections FUNCTIONAL)
Maintain Core Cooling / Steam Generator Makeup Pump Discharge(1)	BFD-1510	BFD-28
Maintain RCS Inventory Control / RCS Inventory Makeup Pump Suction(1)	RWST FLEX Connections	Unit 3 RWST FLEX Connections
Maintain RCS Inventory Control / RCS Inventory Makeup Pump Discharge(1)	CVCS-4906	SI-7302
Maintain SFP Cooling / SFP Makeup Pump Suction	RWST FLEX Connections	CST FLEX Connections
Maintain SFP Cooling / SFP Makeup Pump Discharge	SFPC-1	5" SFP FLEX Connection
Various (Plant Monitoring and Control) / 600KW FLEX Diesel Generator(1)	52/FLEX21	Primary Windings (high voltage) of Lighting Transformers 22 & 23

(1) FLEX Connection FUNTIONALITY is NOT required if reactor pressure vessel is defueled.

3.10 BEYOND DESIGN BASES COMPONENTS

B 3.10.B FLEX Fluid and Electrical Connections

BASES

BACKGROUND	NRC Order EA-12-049, “Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for beyond-Design-Basis External Events,” required plants to provide mitigating strategies and associated equipment for an extended loss of power following design basis events or conditions. This was in partial response to the March 2011 Fukushima accident. NRC endorsed NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide” as an acceptable approach for satisfying the requirements of Order EA-12-049. TRM Section 3.10.B directly implements the requirements contained in Section 11.5 of NEI 12-05 for portions of the FLEX equipment connections listed in Table 3.10.B-1.
TRO	The equipment and primary and secondary equipment connections in Table 3.10.B-1 are required to be FUNCTIONAL at all times to assure redundancy of function.
APPLICABILITY	A beyond design basis event could occur regardless of operational MODE and there will be a need for the equipment as defined in procedures. A Note indicates that TRO 3.0.D.c is applicable so that MODE changes can be made while in an action statement since the risk of a beyond design basis event is the same for all modes.
ACTIONS	The Conditions, Required Actions, and Completion Times are in accordance with Section 11.5 of NEI 12-06. When installed plant equipment which supports FLEX strategies becomes unavailable, then the FLEX strategy affected by this unavailability does not need to be maintained during the unavailability. However, if the FLEX strategy uses specific FLEX equipment, then TRM Conditions for that equipment needs to be entered since the support function is lost.

ACTIONS (continued)

A.1 and A.2

The primary or secondary equipment connections can be out of service for up to 90 days provided the redundant equipment is functional. An additional action is added to report to OSRC in 14 days if corrective action is not completed within 15 days. This provides added management of oversight of the restoration process.

B.1

Compensatory actions must be taken if the required equipment connection is not expected to be restored or is not restored within 90 days. Action is required to be initiated immediately since adequate time exists to determine the scope of the compensatory action and completion should be practical within a limited time. If the potential for a site specific external event is identified, action should be initiated to restore redundancy immediately.

C.1

If both primary and secondary connections become non-functioning then initiate actions to restore one of the connections within 24 hours.

D.1

If one connection cannot be restored in 24 hours after both connections become non-functioning, then initiate actions immediately to implement compensatory actions. The completion of this activity should reflect the need to quickly restore the function.

SURVEILLANCE REQUIREMENTS

In accordance with NEI 12-06, Section 11.5 Periodic testing and frequency should be determined based on equipment type and expected use. Testing should be done to verify design requirements and/or basis. The basis should be documented and deviations from vendor recommendations and applicable standards should be justified. This activity is not controlled by the TRM. Failed surveillances render components inoperable.

3.10 BEYOND DESIGN BASES COMPONENTS

3.10.C Spent Fuel Pool Level Instrumentation

TRO 3.10.C The primary and back-up spent fuel pool level instruments shall be FUNCTIONAL.

APPLICABILITY: At all times.

----------NOTE----------
TR0 3.0.D.c is applicable

.ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The primary OR back-up spent fuel pool level instrument does not meet the FUNCTIONAL requirements.	A. Restore spent fuel pool level instrument to FUNCTIONAL status	14 days
B. Action A. completion time not met.	B. Present a report to OSRC on why out of service with plan to repair and plans for compensatory measures	14 days
C. The primary OR back-up spent fuel pool level instrument does not meet the FUNCTIONAL requirements.	C. Initiate actions to implement compensatory measures such as use of alternate suitable equipment or supplemental personnel	90 days
D. The primary AND back-up spent fuel pool level instruments do not meet the FUNCTIONAL requirements.	D. Restore one of the channels of instrumentation.	24 hours
E. Required Action and associated Completion Time of Condition D not met	E. Initiate actions to Implement compensatory measures such as use of alternate suitable equipment or supplemental personnel	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
TRS 3.10.C.1 Perform a CHANNEL CHECK	Quarterly

3.10 BEYOND DESIGN BASES COMPONENTS

B 3.10.C Spent Fuel Pool Level Instrumentation

BASES

BACKGROUND

NRC Order EA-12-051, “Issuance of Order to Modify Licenses with regard to Reliable Spent Fuel Pool Instrumentation,” required plants to provide reliable SFP instrumentation in partial response to the March 2011 Fukushima accident. NRC interim staff guidance JLD-ISG-2012-03 endorsed NEI 12-02, “Industry Guidance for Compliance with NRC Order EA-12-051,” as an acceptable approach for satisfying the requirements of Order EA-12-051. TRM Section 3.10.C directly implements the requirements contained in Section 4.3 of NEI 12-02. Primary and backup SFP level instruments (LI-6500-A and LI-6500-B) have been installed which output in the Fan Room. The level instruments aid in the monitoring and maintenance of SFP level to support operation of the SFP cooling system, provide radiation shielding for personnel on the SFP operating deck, and to ensure the fuel remains covered.

The instruments are powered as follows:

- Channel A 120 VAC from Distribution Panel 1, Circuit 6 .
- Channel B 120 VAC from Distribution Panel 2, Circuit 6 .
- Local backup battery power is provided for both level instruments.

TRO

Both primary and backup SFP level instruments are required to be FUNCTIONAL at all times to assure redundancy of function. Function is when they provide an accurate indication of spent fuel pool level.

APPLICABILITY

A beyond design basis event could occur regardless of operational MODE and there will be spent fuel in the spent fuel pool at all times. Beyond design basis events (seismic, flood, tornado) have been identified by NRC to date and other events may be evaluated, if identified and required as part of regulatory requirements. A Note indicates that TRO 3.0.D.c is applicable so that MODE changes can

be made while in an action statement since the risk of a beyond design basis event is the same for all modes.

ACTIONS

The Conditions, Required Actions, and Completion Times are in accordance with Section 4.3 of NEI 12-02. Potential compensatory measures which may be considered include use of suitable alternate equipment or supplemental personnel stationed at the SFP.

A.

The primary or back-up instrument channel can be not FUNCTIONAL, including out of service for testing, maintenance and/or calibration, for up to 14 days provided the other channel is FUNCTIONAL. An additional action is added to report to OSRC if corrective action is not completed within two weeks. This provides added management of oversight of the restoration process.

B.

An action is added to report to OSRC if corrective action A is not completed within two weeks. Two weeks is provided to make this report which provides management of oversight of the restoration process and any expectations of corrective actions.

C.

This condition is entered when Condition A is entered. It initiates immediate action requirements if the primary or backup instrument channel is not repaired. Compensatory actions must be taken if the instrumentation channel is not expected to be restored or is not restored within 90 days. Action is required immediately since adequate time exists to determine the scope of the compensatory action.

D.

If both channels become non-functioning then initiate actions to restore one of the channels of instrumentation within 24 hours.

E.

If either channel cannot be restored in 24 hours after both channels become non-functioning, then initiate actions immediately to implement compensatory actions (e.g., use of alternate suitable equipment or

supplemental personnel). The completion of this activity should reflect the need to quickly restore the function.

SURVEILLANCE REQUIREMENTS

In accordance with NEI 12-02, Section 4.3 processes shall be established and maintained for scheduling and implementing necessary testing and calibration of the primary and backup SFP level instrument channels to maintain the instrument channels at the design accuracy. The testing and calibration of the instrumentation shall be consistent with vendor recommendations or other documented basis. Calibration shall be specific to the mounted instrument and the monitor.

TRS 3.10.1.1

A CHANNEL CHECK shall be performed by verifying that redundant instrument channels are reading consistently and that these levels are consistent with in the reading on the ruler on the side of the Spent Fuel Pool that will indicate where the level is. The check will also verify that there is a blinking green light that indicates the unit is calibrating.

Since the Channel Check verifies that the instrument is reading correctly and that it continues to self-calibrate, there is no TRM requirement for calibration surveillance.

3.11 B.5.b MITIGATING STRATEGIES

3.11.A B.5.b Equipment

TRO 3.11.A The B.5.b equipment specified in TRM Table 3.11.A-1 shall be FUNCTIONAL.

APPLICABILITY: At all times.

----------NOTE----------

Separate Condition entry is allowed for each component.

TR0 3.0.D.c is applicable

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more B.5.b components specified in TRM Table 3.11.A-1 does not meet the Column 2 FUNCTIONAL requirements.	A.1 Ensure B.5.b components specified in TRM Table 3.11.A-1 Column 1 staged at Primary B.5.b location AND A.2 Restore the B.5.b component to Column 2 FUNCTIONAL status AND A.3 If not restored within 15 days, present a report to OSRC giving why out of service and plan to repair	Immediately 90 days 14 days
B. One or more B.5.b components specified in TRM Table 3.11.A-1 does not meet the Column 1 FUNCTIONAL requirements.	B.1 Restore site B.5.b capability to Column 1 FUNCTIONAL status	24 hours
C. One or more B.5.b components specified in TRM Table 3.11.A-1 does not meet the Column 1 FUNCTIONAL requirements during a forecast site specific external event.	C.1 Initiate actions to supplement the B.5.b component with alternate suitable equipment	Immediately

D. Required Action and associated Completion Time of Condition B not met	D.1 Initiate actions to Implement compensatory measures	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Not Controlled per TRM	

TRM Table 3.11.A-1

B.5.b EQUIPMENT THAT DIRECTLY PERFORMS A B.5.b MITIGATION STRATEGY FOR THE KEY SAFETY FUNCTIONS

COMPONENT	NUMBER REQUIRED TO SUPPORT B.5.b STRATEGIES (Column 1)	NUMBER TO MEET B.5.b SPARE REQUIREMENTS (Column 2)
Diesel-Driven Pump w/ Battery and Trailer	1	2

3.11 B.5.b MITIGATING STRATEGIES

B 3.11.A B.5.b Equipment

BASES

BACKGROUND As a result of the terrorist events of September 11, 2001, the NRC issued EA-02-026, “Order for Interim Safeguards and Security Compensatory Measures” (the ICM Order) dated February 25, 2002. The ICM Order, which is designated as Safeguards Information (SGI), modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM Order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and SFP cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts.

Events at the Fukushima – Daiichi Nuclear Power Station following the March 11, 2011, earthquake and tsunami highlight the potential importance of B.5.b mitigating strategies in responding to beyond design basis events.

TRO The existing guidance on the implementation of the strategies, which was adopted by all licensees to meet the regulatory requirements for mitigating strategies, does not describe in detail the practices necessary for maintenance and testing of the B.5.b equipment. In accordance with NEI 06-12 guidelines for FLEX equipment, B.5.b equipment associated with external mitigation strategies shall meet standard industry practices for procuring and maintaining commercial equipment. For a multiple unit site, B.5.b assumes only one unit is affected by the event. The equipment to meet Column 2 requirements are required to be FUNCTIONAL at all times to assure redundancy of function. An additional spare diesel-driven pump is maintained in order to ensure continuity should one pump become unavailable.

APPLICABILITY A B.5.b event could occur regardless of operational MODE and there will be a need for the equipment as defined in procedures. A Note indicates that TRO 3.0.D.c is applicable so that MODE changes can be made while in an action statement since the risk of a B.5.b event is the same for all modes.

ACTIONS

The Conditions, Required Actions, and Completion Times are in accordance with the guidelines discussed in Section 11.5 of NEI 12-06 for FLEX equipment. Potential compensatory measures which may be considered include use of suitable FLEX equipment or alternate equipment rented from offsite.

A.1, A.2 and A.3

The equipment to meet Column 2 FUNCTIONAL requirements can be out of service for up to 90 days provided the redundant equipment is functional and immediately staged at the Primary B.5.b location. The requirement to move the redundant pump to the Primary B.5.b location is to ensure that it is located outside the potential impact zone and will be available during the event. An additional action is added to report to OSRC in two weeks if corrective action is not completed within 15 days. This provides added management of oversight of the restoration process.

B.1

If the equipment to meet Column 1 FUNCTIONAL requirements becomes non-functioning then initiate actions to restore one of the redundant pieces of equipment within 24 hours. Compensatory actions must be taken if the equipment to meet Column 1 FUNCTIONAL requirements is not expected to be restored or is not restored within 24 hours. Action is required to be initiated immediately since adequate time exists to determine the scope of the compensatory action and completion should be practical within a limited time.

C.1

If the equipment to meet Column 1 FUNCTIONAL requirements becomes non-functioning and potential for a site specific external event is identified, action should be initiated immediately to supplement the equipment with alternate suitable equipment.

D.1

If the equipment to meet Column 1 FUNCTIONAL requirements cannot be restored in 24 hours after the redundant components become non-functioning, then initiate actions immediately to implement compensatory actions. The completion of this activity should reflect the need to quickly restore the function.

SURVEILLANCE REQUIREMENTS

Periodic testing and frequency should be determined based on equipment type and expected use. Testing should be done to verify design requirements and/or basis. The basis should be documented and deviations from vendor recommendations and applicable standards should be justified. This activity is not controlled by the TRM.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibilities

5.1.A The Plant Manager shall be responsible for overall unit operation in accordance with the Technical Requirements Manual.

5.1.B The Shift Manager shall be responsible for ensuring plant operations are in accordance with the Technical Requirements Manual.

Example: Technical Requirements for Operation (TRO) are met or Required Actions are met within associated Completion Time(s).

5.1.C Department Managers shall be responsible for ensuring work activities are performed in accordance with the Technical Requirements Manual.

Example: Technical Requirement Surveillance (TRS) are met, Technical Requirements for Operations (TRO) are met.

5.0 ADMINISTRATIVE CONTROLS

5.2 Technical Requirements Manual Update and Bases Control

5.2.A Changes to the Technical Requirements Manual (TRM) and Bases shall be made in accordance with EN-LI-113, “Licensing Basis Document Change Process”

5.0 ADMINISTRATIVE CONTROLS

5.3 Procedures

5.3.A Written procedures shall be established, implemented, and maintained covering the Technical Requirements Manual activities.

5.3.B Each procedure of Requirement 5.3.A, and changes thereto, shall be reviewed and approved in accordance with an approved process that meets the requirements of the Quality Assurance Program Manual (QAPM) prior to implementation.

5.0 ADMINISTRATIVE CONTROLS

5.4 Reporting Requirements

5.4.A Hurricane Alert

a. If the National Weather Service issues a Hurricane Warning for a hurricane with wind in excess of 87 knots (approximately 100 mph) within 500 nautical miles of the facility, a prompt report shall be made to the NRC Incident Response Center within 1 hour of receipt of that Hurricane Warning. This notification is in lieu of the reporting requirements of 10 CFR 50.73.

b. If the National Weather Service issues a Hurricane Warning for a hurricane with wind in excess of 87 knots within 320 nautical miles of the facility and a Hurricane Warning is in effect for any coastal area south of Indian Point or any coastal area east of Indian Point as far as New Haven, Connecticut, the hurricane direction, translational velocity and average wind speed shall be monitored at least every hour. Appropriate action shall be taken to ensure the plant is in the MODE 5 condition prior to arrival on site of a hurricane with winds in excess of 87 knots.

c. Upon receipt of Hurricane Warnings for the mid-Atlantic coast of the United States, reports issued by the National Weather Service and the National Hurricane Center shall be monitored at least every hour.

5.4.B Not Used

5.4.C Operating Data Report

Provide to the NRC, using an industry database (e.g., INPO's Consolidated Data Entry (CDE) program), the operating data for each calendar month that is described in Generic Letter 97-02, "Revised Contents of the Monthly Operating Report," by the last day of the month following the end of each calendar quarter.

5.4.D

Provide annual occupational exposure information to the NRC which supports the apportionment of station doses to differentiate between operating (IP2 and IP3) and shutdown units (IP1). The data will provide the summary distribution of annual whole body doses as presented in Appendix B of NUREG-0713 for operating and shutdown units. The information is to be included in the annual 10 CFR 20.2206 report. [COM NL-04-135-B]

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs

5.5.A Offsite Dose Calculation Manual (ODCM)

PURPOSE:

Technical Specification 5.5.1, “Offsite Dose Calculation Manual” contains the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program.

The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Technical Specification 5.6.2 and 5.6.3.

PROCEDURE SECTION:

The ODCM is implemented by the ODCM Part 2: Calculational Methodologies

REFERENCE:

Technical Specification 5.5.1, “Offsite Dose Calculation Manual (ODCM)”

5.5.B Primary Coolant Sources Outside Containment

PURPOSE:

Technical Specification 5.5.2, "Primary Coolant Sources Outside Containment," provides a program to minimize leakage to levels as low as practicable from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident.

PROCEDURE SECTION:

1. The Primary Coolant Sources Outside Containment Program is controlled through the following procedures:

   Engineering Report No. IP-RPT-08-00001, “Primary Coolant Sources Outside of Containment”

5.5 Programs

5.5.B Primary Coolant Sources Outside Containment (continued)

2. The Primary Coolant Sources Outside Containment Program is implemented through procedures listed in IP-RPT-08-00001.

5.5.B Primary Coolant Sources Outside Containment (continued)

h. Secondary Boiler Blowdown Purification System

PT-A43B, "Secondary Boiler Blowdown Purification System High Pressure Test"

REFERENCE:

Technical Specification 5.5.2, "Primary Coolant Sources Outside Containment"

5.5.C Radioactive Effluent Control Program

PURPOSE:

Technical Specification 5.5.3, "Radioactive Control Program" provides a program to conform with 10 CFR 50.36a for control of radioactive effluents and for maintaining doses to members of the public from radioactive effluents as low as reasonably achievable.

PROCEDURE SECTION:

The Radioactive Effluent Controls Program is implemented by the ODCM Part 1: "Radiological Effluent Controls."

REFERENCE:

Technical Specification 5.5.3, "Radioactive Effluent Controls Program"

5.5.D Component Cyclic or Transient Limit

PURPOSE:

Technical Specification 5.5.4, "Component Cyclic or Transient Limit," provides a program to track cyclic and transient occurrences to ensure components are maintained within design limits.

5.5 Programs

DESCRIPTION:

This program provides controls to track the UFSAR, Section 4.1, cyclic and transient occurrences to ensure components are maintained within the design limits.

5.5.D Component Cyclic or Transient Limit (continued)

PROCEDURE SECTION:

This data is compiled and analyzed by vendor whenever necessary and the results are issued in a formal report.

REFERENCE:

Technical Specification 5.5.4, “Component Cyclic or Transient Limit”

5.5.E Reactor Coolant Pump Flywheel Inspection Program

PURPOSE:

Technical Specification 5.5.5, “Reactor Coolant Pump Flywheel Inspection Program” provides controls for the inspection of each reactor coolant pump flywheel using ultrasonic methods.

PROCEDURE SECTION:

The Reactor Coolant Pump Flywheel Inspection Program is part of the Stations Augmented Inservice Inspection Program. All required inspections are performed by an outside contractor, e.g., Westinghouse, in accordance with approved vender procedures. Vender procedures are reviewed and approved for use, prior to inspection of the flywheels.

REFERENCE:

Technical Specification 5.5.5, “Reactor Coolant Pump Flywheel Inspection Program”

5.5.F Inservice Testing Program

PURPOSE:

Technical Specification 5.5.6, “Inservice Testing Program” provides controls for inservice testing of ASME Code Class 1, 2, and 3 components.

5.5 Programs

PROCEDURE SECTION:

1. The Inservice Testing Program is controlled through the following procedure:

   EN-DC-332, “Inservice Testing”

REFERENCE:

Technical Specification 5.5.6, “Inservice Testing Program”

5.5.G Steam Generator (SG) Tube Surveillance Program

PURPOSE:

Technical Specification 5.5.7, “Steam Generator (SG) Tube Surveillance Program” assures the continued integrity of the steam generator tubes that are a part of the primary coolant pressure boundary.

PROCEDURE SECTION:

The Steam Generator (SG) Tube Surveillance Program is implemented by EN-DC-317, “Entergy Steam Generator Administrative Program”

REFERENCE:

Technical Specification 5.5.7, “Steam Generator (SG) Tube Surveillance Program”

5.5.H Secondary Water Chemistry Program

PURPOSE:

Technical Specification 5.5.8, “Secondary Water Chemistry Program” provides a program for monitoring secondary water chemistry to inhibit SG tube degradation.

PROCEDURE SECTION:

The Secondary Water Chemistry Program is implemented through the following procedures:

Strategic Secondary Water Chemistry Plan
CH-SQ-13.018, “Chemistry Program For Sampling, Analysis and Control of Secondary Systems”

5.5 Programs

REFERENCE:

Technical Specification 5.5.8, “Secondary Water Chemistry Program”

5.5.I Ventilation Filter Testing Program (VFTP)

PURPOSE:

A program shall be established to implement the following required testing of the Control Room Ventilation System (CRVS) in accordance with Regulatory Guide 1.52, Revision 2, March 1978, and ANSI N510-1975. Tests described in Technical Specifications 5.5.9.a, 5.5.9.b, 5.5.9.c and 5.5.9.d shall be performed:

1) Within 31 days after 720 hours of charcoal adsorber operation since the last test (requires performance of 5.5.9.c only); and,

2) After 24 months of standby service; and,

3) After each complete or partial replacement of the HEPA filter train or charcoal adsorber filter; and,

5.5 Programs

5.5.I Ventilation Filter Testing Program (VFTP) (continued)

4) After any structural maintenance on the system housing that could alter system integrity; and,

5) After painting, fire, or chemical release in any ventilation zone communicating with the system while it is in operation.

PROCEDURE SECTION:

The Ventilation Filter Testing Program is implemented through the following procedures:

DSR-1, “Control Room Operations Surveillance Requirements”
DSR-16, “Control Room Operations Surveillance Requirements”
PT-EM1, “TSC Filtration”
PT-EM13, “CCR Filtration”
PT-EM13A, “CCR Filtration Charcoal Sampling and Analysis”

REFERENCE:

Technical Specification 5.5.9, “Ventilation Filter Testing Program (VFTP)”

5.5.J Explosive Gas and Storage Tank Radioactive Monitoring Program

PURPOSE:

This program provides controls for potentially explosive gas mixtures contained in the Waste Gas Holdup System, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined following the methodology in Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or Failure.” The liquid radwaste quantities shall be determined in accordance with Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures."

PROCEDURE SECTION:

The Explosive Gas and Storage Tank Radioactivity Monitoring Program is implemented through the following procedures:

TRM, TRO 3.7B “Explosive Gas Monitoring”
ODCM, D 3.1.4 “Liquid Holdup Tanks”
ODCM, D 3.2.6 “Gas Storage Tanks”

5.5 Programs

5.5.J Explosive Gas and Storage Tank Radioactive Monitoring Program (continued)

REFERENCE:

Technical Specification 5.5.10, “Explosive Gas and Storage Tank Radioactivity Monitoring Program”

5.5.K Diesel Fuel Oil Testing Program

PURPOSE:

Technical Specification 5.5.11, “Diesel Fuel Oil Testing Program” provides a program to test both new and stored Emergency Diesel Generator fuel oil.

PROCEDURE SECTION:

The Diesel Fuel Oil Testing Program is implemented through the following procedures:

CH-SQ-13-015, “Chemistry Program for Sampling, Analysis and Control of General Plant Systems”

IPC-A-045-S, “Emergency Diesel Generator Fuel Oil Inspection”

REFERENCE:

Technical Specification 5.5.11, “Diesel Fuel Oil Testing Program”

5.5.L Technical Specification (TS) Bases Control Program

PURPOSE:

Technical Specification 5.5.12, “Technical Specification (TS) Bases Control Program” provides a program to processing changes to the Bases of the Technical Specifications.

PROCEDURE SECTION:

The Technical Specification (TS) Bases Control Program is implemented by EN-LI-113, “Licensing Basis Document Change Process”.

5.5 Programs

5.5.L Technical Specification (TS) Bases Control Program (continued)

REFERENCE:

Technical Specification 5.5.12, “Technical Specification (TS) Bases Control Program”

5.5.M Safety Function Determination Program (SFDP)

PURPOSE:

Technical Specification 5.5.13, “Safety Function Determination Program (SFDP)” provides a program to ensure loss of safety function is detected and appropriate actions are taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions.

PROCEDURE SECTION:

The Safety Function Determination Program (SFDP) is implemented through the following procedure

OAD-54, “Safety Function Determination Program”

REFERENCE:

Technical Specification 5.5.13, “Safety Function Determination Program (SFDP)”

5.5.N Containment Leakage Rate Testing Program

PURPOSE:

Technical Specification 5.5.14 “Containment Leakage Rate Testing Program” provides a program to establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions.

PROCEDURE SECTION:

The Containment Leakage Rate Testing Program is implemented through the following procedures:

PI-2Y1, “External Containment Structural Visual Inspection”

5.5 Programs

5.5.N Containment Leakage Rate Testing Program (continued)

PI-R2, “Internal Containment Structural Visual Inspection”
PT-R11, “Sensitive Leak Rate Test – Type “B””
PT-R26, “Isolation Valve Seal Water System Functional Test”
PT-R27, “Appendix J Local Leak Rate”
PT-R27A, “885A, 885B & 741A Leak Rate Determination”
PT-R27C, “WCPPS Local Leak Rate”
PT-R140, "Type B Leak Test Penetrations UU & VV”
PT-R154, “FCU Outlet In Leakage Test”
PT-R155, “FCU In Leakage Test”
PT-SA10B, “Containment Airlocks”

REFERENCE:

Technical Specification 5.5.14, “Containment Leakage Rate Testing Program”

5.5.O Battery Monitoring and Maintenance Program

PURPOSE:

Technical Specification 5.5.15, “Battery Monitoring and Maintenance Program” provides a program for battery restoration and maintenance, based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer.

Additionally, the Battery Monitoring and Maintenance Program incorporates guidance from IEEE 450-1995 for performing battery inspections, Corrective Actions, State of Charge and Performance Tests including:

PROCEDURE SECTION:

The Battery Monitoring and Maintenance Program is implemented through the following procedures:

2PT-W10, “Weekly Battery Surveillance Requirements”
PI-A9, “Station Battery Inspection”
PT-M22, “Station Battery”
PT-Q1A, “21 Station Battery Surveillance and Charging”
PT-Q1B, “22 Station Battery Surveillance and Charging”
PT-Q1C, “23 Station Battery Surveillance and Charging”
PT-Q1D, “24 Station Battery Surveillance and Charging”
PT-R76A, “Station Battery 21 Load”
PT-R76B, “Station Battery 22 Load”

5.5 Programs

5.5.O Battery Monitoring and Maintenance Program (continued)

PT-R76C, “Station Battery 23 Load”
PT-R76D, “Station Battery 24 Load”

REFERENCE:

Technical Specification 5.5.15, “Battery Monitoring and Maintenance Program”

5.0 ADMINISTRATIVE CONTROLS

5.6 Record Retention

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

5.6.A The following records shall be retained for at least 5 years:

a. Records of changes made to the procedures required by Technical Requirements Manual.

b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to Technical Requirements Manual.

c. Records of surveillance activities, inspections, and calibrations required by the Technical Requirements Manual.

5.6.B The following records shall be retained for the duration of the unit Operating License:

a. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments required by the Technical Requirements Manual and pursuant to 10 CFR 50.59.

b. Records of reviews and audits required by the Technical Requirements Manual.

c. Records of service lives of all safety related snubbers included the date at which the service live commences and the associated installation and maintenance records.