

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 18, 2011

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 11-009
NL&OS/ETS R0
Docket Nos. 50-338/339
License Nos. NPF-4/7

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNITS 1 AND 2
TYPED TS PAGES FOR PROPOSED LICENSE AMENDMENT REQUEST
REGARDING RISK-INFORMED JUSTIFICATION FOR THE RELOCATION OF
SPECIFIC SURVEILLANCE FREQUENCY REQUIREMENTS TO A LICENSEE
CONTROLLED PROGRAM (ADOPTION OF TSTF-425, REVISION 3)

In a March 30, 2010 letter (Serial No. 10-050), Dominion requested amendments, in the form of changes to the Technical Specifications (TS) to Facility Operating License Numbers NPF-4 and NPF-7, for North Anna Power Station Units 1 and 2, respectively. The proposed amendments would modify North Anna TS by relocating specific surveillance frequencies to a licensee-controlled program with the implementation of Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies." The March 30, 2010 license amendment request did not contain the typed TS pages for the proposed changes as required by the Model Application for TSTF-425 since other previously submitted license amendment requests were expected to be concluded during the review period and may affect the content or pagination of the typed TS pages.

Consistent with the Model Application for TSTF-425, Dominion is providing the typed TS pages for the proposed change to relocate surveillance frequencies from TS. The TS amendments approved during the review period did not affect any surveillance requirement or associated frequencies included in the March 30, 2010 submittal.

In the March 30, 2010 letter, Dominion had requested 120 days for implementation following approval. However, that implementation schedule was predicated on applying engineering resources to the development of related required programs prior to the amendment approval. Due to the two unit outage at North Anna in the fall of 2010 and the extensive resource demands, these activities have not been completed. Coupled with the NRC review of the amendment request being completed earlier than requested, Dominion now requests the implementation period be extended to 180 days.

A001
NRC

If you have any questions or require additional information, please contact Mr. Thomas Shaub at (804) 273-2763.

Sincerely,



Leslie N. Hartz
Vice President – Nuclear Support Services

Attachment: Typed Technical Specification Pages

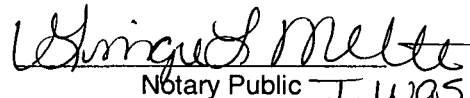
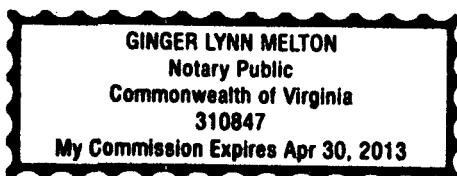
Commitments made in this letter: None

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Leslie N. Hartz who is Vice President – Nuclear Support Services, of Virginia Electric and Power Company. She has affirmed before me that she is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of her knowledge and belief.

Acknowledged before me this 18th day of January, 2011.

My Commission Expires: 4/30/13.



Notary Public

I was commissioned
a notary as
Ginger E. Alligood.

cc: U.S. Nuclear Regulatory Commission
Region II
Marquis One Tower
245 Peachtree Center Avenue, NE
Suite 1200
Atlanta, Georgia 30303-1257

Mr. J. E. Reasor, Jr.
Old Dominion Electric Cooperative
Innsbrook Corporate Center
4201 Dominion Blvd.
Suite 300
Glen Allen, Virginia 23060

State Health Commissioner
Virginia Department of Health
James Madison Building - 7th floor
109 Governor Street
Suite 730
Richmond, Virginia 23219

NRC Senior Resident Inspector
North Anna Power Station

Ms. K. R. Cotton
NRC Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O8 G9A
11555 Rockville Pike
Rockville, Maryland 20852

Dr. V. Sreenivas
NRC Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O8 G9A
11555 Rockville Pike
Rockville, Maryland 20852

ATTACHMENT

TYPED TECHNICAL SPECIFICATION PAGES

**PROPOSED LICENSE AMENDMENT REQUEST REGARDING RISK-INFORMED
JUSTIFICATION FOR THE RELOCATION OF SPECIFIC SURVEILLANCE FREQUENCY
REQUIREMENTS TO A LICENSEE CONTROLLED PROGRAM**

**VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNITS 1 AND 2**

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM)

LCO 3.1.1 SDM shall be within the limits provided in the COLR.

APPLICABILITY: MODE 2 with $k_{eff} < 1.0$,
MODES 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.1.1 Verify SDM to be within limits.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.1.2.1 -----NOTE----- The predicted reactivity values may be adjusted (normalized) to correspond to the measured core reactivity prior to exceeding a fuel burnup of 60 effective full power days (EFPD) after each fuel loading. ----- Verify measured core reactivity is within $\pm 1\% \Delta k/k$ of predicted values.</p>	<p>Once prior to entering MODE 1 after each refueling <u>AND</u> -----NOTE----- Only required after 60 EFPD ----- In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. More than one rod not within alignment limit.	D.1.1 Verify SDM to be within the limit provided in the COLR.	1 hour
	<u>OR</u>	
	D.1.2 Initiate boration to restore required SDM to within limit.	1 hour
	<u>AND</u>	
	D.2 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.4.1	Verify individual rod positions within alignment limit.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.2	Verify rod freedom of movement (trippability) by moving each rod not fully inserted in the core ≥ 10 steps in either direction.	In accordance with the Surveillance Frequency Control Program
SR 3.1.4.3	Verify rod drop time of each rod, from the fully withdrawn position, is ≤ 2.7 seconds from the beginning of decay of stationary gripper coil voltage to dashpot entry, with: a. $T_{avg} \geq 500^{\circ}\text{F}$; and b. All reactor coolant pumps operating.	Prior to reactor criticality after each removal of the reactor head

Shutdown Bank Insertion Limits

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One shutdown bank inserted ≤ 18 steps below the insertion limit and immovable.</p> <p><u>AND</u></p> <p>Each control and shutdown rod within limits of LCO 3.1.4.</p> <p><u>AND</u></p> <p>Each control bank within the insertion limits of LCO 3.1.6.</p>	<p>B.1 Verify SDM to be within the limits provided in the COLR.</p> <p><u>AND</u></p> <p>B.2 Restore the shutdown bank to within insertion limit.</p>	<p>Once per 12 hours</p> <p>72 hours</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.5.1	Verify each shutdown bank is within the insertion limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.6.2	Verify each control bank is within the insertion limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.1.6.3	Verify each control bank not fully withdrawn from the core is within the sequence and overlap limits specified in the COLR.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One demand position indicator per bank inoperable for one or more banks.	D.1.1 Verify by administrative means all RPIs for the affected banks are OPERABLE.	Once per 8 hours
	<u>AND</u>	
	D.1.2 Verify the most withdrawn rod and the least withdrawn rod of the affected banks are ≤ 12 steps apart.	Once per 8 hours
	<u>OR</u>	
	D.2 Reduce THERMAL POWER to $\leq 50\%$ RTP.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.7.1 Perform CHANNEL CALIBRATION of each RPI.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.9.1	Perform a CHANNEL OPERATIONAL TEST on power range and intermediate range channels per SR 3.3.1.7, SR 3.3.1.8, and Table 3.3.1-1.	Prior to initiation of PHYSICS TESTS
SR 3.1.9.2	Verify the RCS lowest loop average temperature is $\geq 531^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program
SR 3.1.9.3	Verify THERMAL POWER is $\leq 5\%$ RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.1.9.4	Verify SDM to be within the limits provided in the COLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.2.1.1 -----NOTE----- If $F_Q^M(Z)$ measurements indicate maximum over $z \left[\frac{F_Q^M(Z)}{K(Z)} \right]$ has increased since the previous evaluation of $F_Q^M(Z)$: a. Increase $F_Q^M(Z)$ by the appropriate factor and verify $F_Q^M(Z)$ is still within limits; or b. Repeat SR 3.2.1.1 once per 7 EFPD until two successive flux maps indicate maximum over $z \left[\frac{F_Q^M(Z)}{K(Z)} \right]$ has not increased. ----- Verify $F_Q^M(Z)$ is within limit.</p>	<p>Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq 10\%$ RTP, the THERMAL POWER at which $F_Q^M(Z)$ was last verified <u>AND</u> In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.4 -----NOTE----- THERMAL POWER does not have to be reduced to comply with this Required Action. ----- Perform SR 3.2.2.1.	Prior to THERMAL POWER exceeding 50% RTP <u>AND</u> Prior to THERMAL POWER exceeding 75% RTP <u>AND</u> 24 hours after THERMAL POWER reaching ≥ 95% RTP
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 2.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.2.1 Verify $F_{\Delta H}^N$ is within limits specified in the COLR.	Once after each refueling prior to THERMAL POWER exceeding 75% RTP <u>AND</u> In accordance with the Surveillance Frequency Control Program

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AXIAL FLUX DIFFERENCE (AFD)

LCO 3.2.3 The AFD in % flux difference units shall be maintained within the limits specified in the COLR.

----- NOTE -----

The AFD shall be considered outside limits when two or more OPERABLE excore channels indicate AFD to be outside limits.

APPLICABILITY: MODE 1 with THERMAL POWER \geq 50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. AFD not within limits.	A.1 Reduce THERMAL POWER to < 50% RTP.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.3.1 Verify AFD within limits for each OPERABLE excore channel.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.6 -----NOTE----- Perform Required Action A.6 only after Required Action A.5 is completed. -----</p> <p>Perform SR 3.2.1.1 and SR 3.2.2.1.</p>	Within 24 hours after achieving equilibrium Conditions at RTP not to exceed 48 hours after increasing THERMAL POWER above the limit of Required Action A.1
B. Required Action and associated Completion Time not met.	B.1 Reduce THERMAL POWER to $\leq 50\%$ RTP.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.2.4.1 -----NOTES-----</p> <p>1. With input from one Power Range Neutron Flux channel inoperable and THERMAL POWER $\leq 75\%$ RTP, the remaining three power range channels can be used for calculating QPTR.</p> <p>2. SR 3.2.4.2 may be performed in lieu of this Surveillance.</p> <p>-----</p> <p>Verify QPTR is within limit by calculation.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.2.4.2 -----NOTE----- Not required to be performed until 12 hours after input from one or more Power Range Neutron Flux channels are inoperable with THERMAL POWER > 75% RTP. ----- Verify QPTR is within limit using the movable incore detectors.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
R. One or more channels inoperable.	R.1 Verify interlock is in required state for existing unit conditions.	1 hour
	<u>OR</u> R.2 Be in MODE 2.	7 hours
S. One trip mechanism inoperable for one RTB.	S.1 Restore inoperable trip mechanism to OPERABLE status.	48 hours
	<u>OR</u> S.2 Be in MODE 3.	54 hours

SURVEILLANCE REQUIREMENTS

----- NOTE -----
Refer to Table 3.3.1-1 to determine which SRs apply for each RTS Function.

SURVEILLANCE	FREQUENCY
SR 3.3.1.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.2 -----NOTE----- Not required to be performed until 12 hours after THERMAL POWER is $\geq 15\%$ RTP. ----- Compare results of calorimetric heat balance calculation to power range channel output. Adjust power range output if calorimetric heat balance calculation result exceeds power range channel output by more than +2% RTP..	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.3 -----NOTE----- Not required to be performed until 72 hours after THERMAL POWER is ≥ 15% RTP. -----</p> <p>Compare results of the incore detector measurements to Nuclear Instrumentation System (NIS) AFD. Adjust NIS channel if absolute difference is ≥ 3%.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.4 -----NOTE----- This Surveillance must be performed on the reactor trip bypass breaker immediately after placing the bypass breaker in service. -----</p> <p>Perform TADOT.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.5 Perform ACTUATION LOGIC TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.6 -----NOTE----- Verification of setpoint is not required. -----</p> <p>Perform TADOT.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.7 -----NOTE----- Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. -----</p> <p>Perform COT.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.8 -----NOTE----- This Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. -----</p> <p>Perform COT.</p>	<p>-----NOTE----- Only required when not performed within the frequency specified in the Surveillance Control Program -----</p> <p>Prior to reactor startup</p> <p><u>AND</u></p> <p>Four hours after reducing power below P-6 for source range instrumentation</p> <p><u>AND</u></p> <p>Twelve hours after reducing power below P-10 for power and intermediate range instrumentation</p> <p><u>AND</u></p> <p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.9 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Adjust NIS channel if absolute difference $\geq 3\%$. 2. Not required to be performed until 72 hours after THERMAL POWER is $\geq 50\%$ RTP. <p>-----</p> <p>Compare results of the excore channels to incore detector measurements.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.10 -----NOTE-----</p> <p>This Surveillance shall include verification that the time constants are adjusted to the prescribed values.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.11 -----NOTE-----</p> <p>Neutron detectors are excluded from CHANNEL CALIBRATION.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.1.12 Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.1.13 Perform COT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.14 -----NOTE----- Verification of setpoint is not required. ----- Perform TADOT.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.15 -----NOTE----- Verification of setpoint is not required. ----- Perform TADOT.	Prior to exceeding the P-8 interlock whenever the unit has been in MODE 3, if not performed within the previous 31 days
SR 3.3.1.16 -----NOTE----- Neutron detectors are excluded from response time testing. ----- Verify RTS RESPONSE TIME is within limits.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. One or more channels inoperable.	J.1 Verify interlock is in required state for existing unit condition.	1 hour
	<u>OR</u>	
	J.2.1 Be in MODE 3.	7 hours
	<u>AND</u> J.2.2 Be in MODE 4.	13 hours

SURVEILLANCE REQUIREMENTS

----- NOTE -----
Refer to Table 3.3.2-1 to determine which SRs apply for each ESFAS Function.

SURVEILLANCE	FREQUENCY
SR 3.3.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.2 Perform ACTUATION LOGIC TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.3 Perform MASTER RELAY TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.2.4 Perform COT	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.5 -----NOTE----- Not required to be performed for SLAVE RELAYS if testing would:</p> <ol style="list-style-type: none"> 1. Result in an inadvertent Reactor Trip System or ESFAS Actuation if accompanied by a single failure in the Safeguard Test Cabinet; 2. Adversely affect two or more components in one or more ESFAS system(s); or 3. Create a reactivity, thermal, or hydraulic transient condition in the Reactor Coolant System. <p>----- Perform SLAVE RELAY TEST.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.6 -----NOTE----- Verification of relay setpoints not required. ----- Perform TADOT.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.7 -----NOTE----- Verification of setpoint not required for manual initiation or interlock functions. -----</p> <p>Perform TADOT.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.8 -----NOTE----- This Surveillance shall include verification that the time constants are adjusted to the prescribed values. -----</p> <p>Perform CHANNEL CALIBRATION.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.3.2.9 -----NOTE----- Not required to be performed for the turbine driven AFW pump until 24 hours after SG pressure is ≥ 1005 psig. -----</p> <p>Verify ESFAS RESPONSE TIMES are within limit.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

----- NOTE -----
SR 3.3.3.1 and SR 3.3.3.3 apply to each PAM instrumentation Function in Table 3.3.3-1 except SR 3.3.3.3 does not apply to Item 10. SR 3.3.3.4 applies only to Item 10.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1	Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.2	Not Used	
SR 3.3.3.3	-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program
SR 3.3.3.4	Perform TADOT.	In accordance with the Surveillance Frequency Control Program

3.3 INSTRUMENTATION

3.3.4 Remote Shutdown System

LC0 3.3.4 The Remote Shutdown System Functions shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions inoperable.	A.1 Restore required Function to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.3.4.1 Perform CHANNEL CHECK for each required instrumentation channel that is normally energized.	In accordance with the Surveillance Frequency Control Program
SR 3.3.4.2 Verify each required control circuit and transfer switch is capable of performing the intended function.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.4.3	Perform CHANNEL CALIBRATION for each required instrumentation channel.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Enter applicable Condition(s) and Required Action(s) for the associated EDG made inoperable by LOP EDG start instrumentation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.3.5.1 -----NOTE----- Verification of setpoint is not required. -----</p> <p>Perform TADOT for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.3.5.2 Perform CHANNEL CALIBRATION with Allowable Values as follows:</p> <p>a. Loss of voltage Allowable Values ≥ 2935 V and ≤ 3225 V with a time delay of 2 ± 1 seconds for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p> <p>b. Degraded voltage Allowable Values ≥ 3720 V and ≤ 3772 V with:</p> <p>1. A time delay of 7.5 ± 1.5 seconds with a Safety Injection (SI) signal for LCO 3.3.5.a Function; and</p> <p>2. A time delay of 56 ± 7 seconds without an SI signal for LCO 3.3.5.a and LCO 3.3.5.b Functions.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.5.3	Verify ESF RESPONSE TIMES are within limit for LCO 3.3.5.a and LCO 3.3.5.b Functions.	In accordance with the Surveillance Frequency Control Program

MCR/ESGR Envelope Isolation Actuation Instrumentation
3.3.6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.6.1	<p>-----NOTE----- Verification of setpoint is not required. -----</p> <p>Perform TADOT.</p>	In accordance with the Surveillance Frequency Control Program

RCS Pressure, Temperature, and Flow DNB Limits
3.4.1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.1.1	Verify pressurizer pressure is greater than or equal to the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.2	Verify RCS average temperature is less than or equal to the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.3	Verify RCS total flow rate is $\geq 295,000$ gpm and is greater than or equal to the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program
SR 3.4.1.4	<p>-----NOTE----- Not required to be performed until 30 days after $\geq 90\%$ RTP. -----</p> <p>Verify by precision heat balance that RCS total flow rate is $\geq 295,000$ gpm and is greater than or equal to the limit specified in the COLR.</p>	In accordance with the Surveillance Frequency Control Program

RCS Minimum Temperature for Criticality
3.4.2

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LC0 3.4.2 Each RCS loop average temperature (T_{avg}) shall be $\geq 541^{\circ}\text{F}$.

APPLICABILITY: MODE 1,
MODE 2 with $k_{eff} \geq 1.0$.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{avg} in one or more RCS loops not within limit.	A.1 Be in MODE 2 with $k_{eff} < 1.0$.	30 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.2.1 Verify RCS T_{avg} in each loop $\geq 541^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. -----NOTE----- Required Action C.2 shall be completed whenever this Condition is entered. -----</p> <p>Requirements of LCO not met any time in other than MODE 1, 2, 3, or 4.</p>	<p>C.1 Initiate action to restore parameter(s) to within limits.</p> <p><u>AND</u></p> <p>C.2 Determine RCS is acceptable for continued operation.</p>	<p>Immediately</p> <p>Prior to entering MODE 4</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.3.1	<p>-----NOTE-----</p> <p>Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing.</p> <p>-----</p> <p>Verify RCS pressure, RCS temperature, and RCS heatup and cooldown rates are within limits.</p>	<p>In accordance with the Surveillance Frequency Control Program.</p>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.4 RCS Loops—MODES 1 and 2

LCO 3.4.4 Three RCS loops shall be OPERABLE and in operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of LCO not met.	A.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.4.1 Verify each RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two required RCS loops inoperable. <u>OR</u> Required RCS loop not in operation.	C.1 Place the Rod Control System in a condition incapable of rod withdrawal.	Immediately
	<u>AND</u> C.2 Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.1.	Immediately
	<u>AND</u> C.3 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.5.1 Verify required RCS loops are in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.5.2 Verify steam generator secondary side water levels are $\geq 17\%$ for required RCS loops.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.5.3 -----NOTE----- Not required to be performed until 24 hours after a required pump is not in operation. ----- Verify correct breaker alignment and indicated power are available to the required pump not in operation.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two required loops inoperable. <u>OR</u> Required loop not in operation.	B.1 Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.1.	Immediately
	<u>AND</u> B.2 Initiate action to restore one loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.6.1 Verify required RHR or RCS loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.2 Verify SG secondary side water levels are $\geq 17\%$ for required RCS loops.	In accordance with the Surveillance Frequency Control Program
SR 3.4.6.3 -----NOTE----- Not required to be performed until 24 hours after a required pump is not in operation. ----- Verify correct breaker alignment and indicated power are available to the required pump not in operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.7.1 Verify required RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.2 Verify SG secondary side water level is $\geq 17\%$ in required SG.	In accordance with the Surveillance Frequency Control Program
SR 3.4.7.3 -----NOTE----- Not required to be performed until 24 hours after a required pump is not in operation. ----- Verify correct breaker alignment and indicated power are available to the required RHR pump not in operation.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No required RHR loop OPERABLE. <u>OR</u> Required RHR loop not in operation.	B.1 Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet SDM of LCO 3.1.1.	Immediately
	<u>AND</u> B.2 Initiate action to restore one RHR loop to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.8.1 Verify required RHR loop is in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.8.2 -----NOTE----- Not required to be performed until 24 hours after a required pump is not in operation. ----- Verify correct breaker alignment and indicated power are available to the required RHR pump not in operation.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	Verify pressurizer water level is $\leq 93\%$.	In accordance with the Surveillance Frequency Control Program
SR 3.4.9.2	Verify capacity of each required group of pressurizer heaters is ≥ 125 kW.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two block valves inoperable.	<p>G.1 -----NOTE----- Required Action G.1 does not apply when block valve is inoperable solely as a result of complying with Required Action C.2. -----</p> <p>Restore one block valve to OPERABLE status.</p>	2 hours
H. Required Action and associated Completion Time of Condition G not met.	<p>H.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>H.2 Be in MODE 4.</p>	<p>6 hours</p> <p>12 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11.1 Verify PORV backup nitrogen supply pressure is within limit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.11.2 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Not required to be performed with block valve closed in accordance with the Required Actions of this LCO. 2. Only required to be performed in MODES 1 and 2. <p>-----</p> <p>Perform a complete cycle of each block valve.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.11.3 -----NOTE-----</p> <p>Only required to be performed in MODES 1 and 2.</p> <p>-----</p> <p>Perform a complete cycle of each PORV.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.11.4 Perform a complete cycle of each solenoid control valve and check valve on the accumulators in PORV control systems.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>G. Two required PORVs inoperable.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition A, B, D, E, or F not met.</p> <p><u>OR</u></p> <p>LTOP System inoperable for any reason other than Condition A, B, C, D, E, or F.</p>	<p>G.1 Depressurize RCS and establish RCS vent of ≥ 2.07 square inches.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.12.1 Verify a maximum of one LHSI pump is capable of injecting into the RCS.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.12.2 Verify a maximum of one charging pump is capable of injecting into the RCS.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.12.3 -----NOTE----- Only required to be met if accumulator pressure is greater than PORV lift setting. ----- Verify each accumulator is isolated and power is removed from the accumulator isolation valve operator.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.12.4 Verify required RCS vent ≥ 2.07 square inches open.	12 hours for unlocked open vent valve(s) <u>AND</u> In accordance with the Surveillance Frequency Control Program
SR 3.4.12.5 Verify PORV block valve is open for each required PORV and PORV keyswitch is in AUTO.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.6 Verify required PORV backup nitrogen supply pressure is within limit.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.7 -----NOTE----- Not required to be met until 12 hours after decreasing RCS cold leg temperature to $\leq 280^{\circ}\text{F}$. ----- Perform a COT on each required PORV, excluding actuation.	In accordance with the Surveillance Frequency Control Program
SR 3.4.12.8 Perform CHANNEL CALIBRATION for each required PORV actuation channel.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.13.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Not required to be performed until 12 hours after establishment of steady state operation. 2. Not applicable to primary to secondary LEAKAGE. <p>-----</p> <p>Verify RCS operational LEAKAGE is within limits by performance of RCS water inventory balance.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.4.13.2 -----NOTE-----</p> <p>Not required to be performed until 12 hours after establishment of steady state operation.</p> <p>-----</p> <p>Verify primary to secondary LEAKAGE is ≤ 150 gallons per day through any one SG.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.4.14.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on any RCS PIVs required to be tested located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. <p>-----</p> <p>Verify leakage from each RCS PIV required to be tested is equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ 2215 psig and ≤ 2255 psig.</p>	<p>In accordance with the Inservice Testing Program, and in accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months</p> <p><u>AND</u></p> <p>Within 24 hours following valve actuation due to automatic or manual action or flow through the valve</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.2	Perform COT of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.3	Perform CHANNEL CALIBRATION of the required containment sump monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.4	Perform CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity $\leq 197 \mu\text{Ci/gm.}$	In accordance with the Surveillance Frequency Control Program
SR 3.4.16.2 Verify reactor coolant DOSE EQUIVALENT I-131 specific activity $\leq 1.0 \mu\text{Ci/gm.}$	In accordance with the Surveillance Frequency Control Program <u>AND</u> Between 2 and 6 hours after a THERMAL POWER change of $\geq 15\%$ RTP within a 1 hour period

RCS Loop Isolation Valves
3.4.17

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.17.2 Verify power removed from each RCS loop isolation valve.	In accordance with the Surveillance Frequency Control Program

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.19 RCS Loops—Test Exceptions

LCO 3.4.19 The requirements of LCO 3.4.4, "RCS Loops—MODES 1 and 2," may be suspended, with THERMAL POWER < P-7.

APPLICABILITY: MODES 1 and 2 during startup and PHYSICS TESTS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. THERMAL POWER \geq P-7.	A.1 Open reactor trip breakers.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.19.1 Verify THERMAL POWER is < P-7.	In accordance with the Surveillance Frequency Control Program
SR 3.4.19.2 Perform a COT for each power range neutron flux—low channel, intermediate range neutron flux channel, P-10, and P-13.	Prior to initiation of startup and PHYSICS TESTS
SR 3.4.19.3 Perform an ACTUATION LOGIC TEST on P-7.	Prior to initiation of startup and PHYSICS TESTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ 7580 gallons and ≤ 7756 gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ 599 psig and ≤ 667 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.5.1.4	Verify boron concentration in each accumulator is ≥ 2500 ppm and ≤ 2800 ppm.	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>-----NOTE----- Only required to be performed for affected accumulators -----</p> <p>Once within 6 hours after each solution volume increase of $\geq 50\%$ of indicated level that is not the result of addition from the refueling water storage tank</p>
SR 3.5.1.5	Verify power is removed from each accumulator isolation valve operator when RCS pressure is ≥ 2000 psig.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE			FREQUENCY																																			
SR 3.5.2.1	<p>Verify the following valves are in the listed position with power to the valve operator removed.</p> <p>Unit 1</p> <table><tr><th><u>Number</u></th><th><u>Position</u></th><th><u>Function</u></th></tr><tr><td>1-SI-MOV-1890A</td><td>Closed</td><td>LHSI to Hot Leg</td></tr><tr><td>1-SI-MOV-1890B</td><td>Closed</td><td>LHSI to Hot Leg</td></tr><tr><td>1-SI-MOV-1836</td><td>Closed</td><td>HHSI Pump to Cold Leg</td></tr><tr><td>1-SI-MOV-1869A</td><td>Closed</td><td>HHSI Pump to Hot Leg</td></tr><tr><td>1-SI-MOV-1869B</td><td>Closed</td><td>HHSI Pump to Hot Leg</td></tr></table> <p>Unit 2</p> <table><tr><th><u>Number</u></th><th><u>Position</u></th><th><u>Function</u></th></tr><tr><td>2-SI-MOV-2890A</td><td>Closed</td><td>LHSI to Hot Leg</td></tr><tr><td>2-SI-MOV-2890B</td><td>Closed</td><td>LHSI to Hot Leg</td></tr><tr><td>2-SI-MOV-2836</td><td>Closed</td><td>HHSI Pump to Cold Leg</td></tr><tr><td>2-SI-MOV-2869A</td><td>Closed</td><td>HHSI Pump to Hot Leg</td></tr><tr><td>2-SI-MOV-2869B</td><td>Closed</td><td>HHSI Pump to Hot Leg</td></tr></table>	<u>Number</u>	<u>Position</u>	<u>Function</u>	1-SI-MOV-1890A	Closed	LHSI to Hot Leg	1-SI-MOV-1890B	Closed	LHSI to Hot Leg	1-SI-MOV-1836	Closed	HHSI Pump to Cold Leg	1-SI-MOV-1869A	Closed	HHSI Pump to Hot Leg	1-SI-MOV-1869B	Closed	HHSI Pump to Hot Leg	<u>Number</u>	<u>Position</u>	<u>Function</u>	2-SI-MOV-2890A	Closed	LHSI to Hot Leg	2-SI-MOV-2890B	Closed	LHSI to Hot Leg	2-SI-MOV-2836	Closed	HHSI Pump to Cold Leg	2-SI-MOV-2869A	Closed	HHSI Pump to Hot Leg	2-SI-MOV-2869B	Closed	HHSI Pump to Hot Leg	In accordance with the Surveillance Frequency Control Program
<u>Number</u>	<u>Position</u>	<u>Function</u>																																				
1-SI-MOV-1890A	Closed	LHSI to Hot Leg																																				
1-SI-MOV-1890B	Closed	LHSI to Hot Leg																																				
1-SI-MOV-1836	Closed	HHSI Pump to Cold Leg																																				
1-SI-MOV-1869A	Closed	HHSI Pump to Hot Leg																																				
1-SI-MOV-1869B	Closed	HHSI Pump to Hot Leg																																				
<u>Number</u>	<u>Position</u>	<u>Function</u>																																				
2-SI-MOV-2890A	Closed	LHSI to Hot Leg																																				
2-SI-MOV-2890B	Closed	LHSI to Hot Leg																																				
2-SI-MOV-2836	Closed	HHSI Pump to Cold Leg																																				
2-SI-MOV-2869A	Closed	HHSI Pump to Hot Leg																																				
2-SI-MOV-2869B	Closed	HHSI Pump to Hot Leg																																				
SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program																																				
SR 3.5.2.3	Verify ECCS piping is sufficiently full of water.	In accordance with the Surveillance Frequency Control Program																																				
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program																																				

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY														
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program														
SR 3.5.2.6	Verify each ECCS pump capable of starting automatically starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program														
SR 3.5.2.7	<div>Verify each ECCS throttle valve listed below is secured in the correct position.</div> <table><tr><th><u>Unit 1 Valve Number</u></th><th><u>Unit 2 Valve Number</u></th></tr><tr><td>1-SI-188</td><td>2-SI-89</td></tr><tr><td>1-SI-191</td><td>2-SI-97</td></tr><tr><td>1-SI-193</td><td>2-SI-103</td></tr><tr><td>1-SI-203</td><td>2-SI-116</td></tr><tr><td>1-SI-204</td><td>2-SI-111</td></tr><tr><td>1-SI-205</td><td>2-SI-123</td></tr></table>	<u>Unit 1 Valve Number</u>	<u>Unit 2 Valve Number</u>	1-SI-188	2-SI-89	1-SI-191	2-SI-97	1-SI-193	2-SI-103	1-SI-203	2-SI-116	1-SI-204	2-SI-111	1-SI-205	2-SI-123	In accordance with the Surveillance Frequency Control Program
<u>Unit 1 Valve Number</u>	<u>Unit 2 Valve Number</u>															
1-SI-188	2-SI-89															
1-SI-191	2-SI-97															
1-SI-193	2-SI-103															
1-SI-203	2-SI-116															
1-SI-204	2-SI-111															
1-SI-205	2-SI-123															
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump component is not restricted by debris and shows no evidence of structural distress or abnormal corrosion.	In accordance with the Surveillance Frequency Control Program														

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.4.1	Verify RWST borated water temperature is $\geq 40^{\circ}\text{F}$ and $\leq 50^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.2	Verify RWST borated water volume is $\geq 466,200$ gallons and $\leq 487,000$ gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.4.3	Verify RWST boron concentration is ≥ 2600 ppm and ≤ 2800 ppm.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.5.1 -----NOTE----- Not required to be performed until 4 hours after the Reactor Coolant System pressure stabilizes at ≥ 2215 psig and ≤ 2255 psig. ----- Verify manual seal injection throttle valves are adjusted to give a flow within limit with RCS pressure ≥ 2215 psig and ≤ 2255 psig and the seal injection hand control valve full open.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.6.1 Verify BIT borated water temperature is $\geq 115^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program
SR 3.5.6.2 Verify BIT borated water volume is ≥ 900 gallons.	In accordance with the Surveillance Frequency Control Program
SR 3.5.6.3 Verify BIT boron concentration is $\geq 12,950$ ppm and $\leq 15,750$ ppm.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.2.1 -----NOTES-----</p> <ol style="list-style-type: none"> 1. An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test. 2. Results shall be evaluated against acceptance criteria applicable to SR 3.6.1.1. <p>-----</p> <p>Perform required air lock leakage rate testing in accordance with the Containment Leakage Rate Testing Program.</p>	<p>In accordance with the Containment Leakage Rate Testing Program</p>
<p>SR 3.6.2.2 Verify only one door in the air lock can be opened at a time.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.3.1 -----NOTE----- Valves and blind flanges in high radiation areas may be verified by use of administrative controls. -----</p> <p>Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.6.3.2 -----NOTE----- Valves and blind flanges in high radiation areas may be verified by use of administrative means. -----</p> <p>Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed, or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.</p>	<p>Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days</p>
<p>SR 3.6.3.3 Verify the isolation time of each automatic power operated containment isolation valve is within limits.</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.6.3.4 Perform leakage rate testing for containment purge valves with resilient seals.</p>	<p>Prior to entering MODE 4 from MODE 5 after containment vacuum has been broken</p>

Containment Isolation Valves
3.6.3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.3.6	Cycle each weight or spring loaded check valve not testable during operation through one complete cycle of full travel, and verify each check valve remains closed when the differential pressure in the direction of flow is < 1.2 psid and opens when the differential pressure in the direction of flow is ≥ 1.2 psid and < 5.0 psid.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LC0 3.6.4 Containment air partial pressure shall be within the acceptable operation range shown on Figure 3.6.4-1.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment air partial pressure not within limits.	A.1 Restore containment air partial pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.1 Verify containment air partial pressure is within limits.	In accordance with the Surveillance Frequency Control Program

Containment Air Temperature
3.6.5

3.6 CONTAINMENT SYSTEMS

3.6.5 Containment Air Temperature

LCO 3.6.5 Containment average air temperature shall be $\geq 86^{\circ}\text{F}$ and $\leq 115^{\circ}\text{F}$.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment average air temperature not within limits.	A.1 Restore containment average air temperature to within limits.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.5.1 Verify containment average air temperature is within limits.	In accordance with the Surveillance Frequency Control Program

3.6 CONTAINMENT SYSTEMS

3.6.6 Quench Spray (QS) System

LCO 3.6.6 Two QS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One QS train inoperable.	A.1 Restore QS train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.6.1 Verify each QS manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.2 Verify each QS pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.3	Verify each QS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.4	Verify each QS pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.6.5	Verify each spray nozzle is unobstructed.	Following maintenance which could cause nozzle blockage

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. One outside RS subsystem and one inside RS subsystem inoperable and not in the same train.</p> <p><u>OR</u></p> <p>Three or more RS subsystems inoperable.</p> <p><u>OR</u></p> <p>Two outside RS subsystems inoperable.</p>	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.7.1 Verify casing cooling tank temperature is $\geq 35^{\circ}\text{F}$ and $\leq 50^{\circ}\text{F}$.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.2 Verify casing cooling tank contained borated water volume is $\geq 116,500$ gal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.3 Verify casing cooling tank boron concentration is ≥ 2600 ppm and ≤ 2800 ppm.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.7.4	Verify each RS and casing cooling manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.5	Verify each RS and casing cooling pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.7.6	<p>Verify on an actual or simulated actuation signal(s):</p> <ul style="list-style-type: none"> a. Each RS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position; b. Each RS pump starts automatically; and c. Each casing cooling pump starts automatically. 	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.7	Verify, by visual inspection, each RS train containment sump component is not restricted by debris and shows no evidence of structural distress or abnormal corrosion.	In accordance with the Surveillance Frequency Control Program
SR 3.6.7.8	Verify each spray nozzle is unobstructed.	Following maintenance which could cause nozzle blockage

3.6 CONTAINMENT SYSTEMS

3.6.8 Chemical Addition System

LC0 3.6.8 The Chemical Addition System shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Chemical Addition System inoperable.	A.1 Restore Chemical Addition System to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. <u>AND</u>	6 hours
	B.2 Be in MODE 5.	84 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.8.1 Verify each Chemical Addition System manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.6.8.2 Verify chemical addition tank solution volume is ≥ 4800 gal and ≤ 5500 gal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.3	Verify chemical addition tank NaOH solution concentration is $\geq 12\%$ and $\leq 13\%$ by weight.	In accordance with the Surveillance Frequency Control Program
SR 3.6.8.4	Verify each Chemical Addition System automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.8.5	Verify Chemical Addition System flow from each solution's flow path.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.2.1 -----NOTE----- Only required to be performed in MODES 1 and 2. -----</p> <p>Verify isolation time of each MSTV is ≤ 5 seconds.</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.7.2.2 -----NOTE----- Only required to be performed in MODES 1 and 2. -----</p> <p>Verify each MSTV actuates to the isolation position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more MFPDV inoperable.	D.1 Close or isolate MFPDV.	72 hours
	<u>AND</u> D.2 Verify MFPDV is closed or isolated.	Once per 7 days
E. Two valves in the same flow path inoperable.	E.1 Isolate affected flow path.	8 hours
F. Required Action and associated Completion Time not met.	F.1 Be in MODE 3.	6 hours
	<u>AND</u> F.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.3.1 Verify the isolation time of each MFIV, MFRV, and MFRBV is ≤ 6.98 seconds and the isolation time of each MFPDV is ≤ 60 seconds.	In accordance with the Inservice Testing Program
SR 3.7.3.2 Verify each MFIV, MFPDV, MFRV, and MFRBV actuates to the isolation position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.4 Steam Generator Power Operated Relief Valves (SG PORVs)

LCO 3.7.4 Three SG PORV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required SG PORV line inoperable.	A.1 Restore required SG PORV line to OPERABLE status.	7 days
B. Two or more required SG PORV lines inoperable.	B.1 Restore all but one SG PORV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.4.1 Verify one complete cycle of each SG PORV.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.4.2 Verify one complete cycle of each SG PORV manual isolation valve.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time for Condition A or B not met. <u>OR</u> Two AFW trains inoperable in MODE 1, 2, or 3.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4..	18 hours
D. Three AFW trains inoperable in MODE 1, 2, or 3.	D.1 -----NOTE----- LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. ----- Initiate action to restore one AFW train to OPERABLE status.	Immediately
E. Required AFW train inoperable in MODE 4.	E.1 Initiate action to restore AFW train to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.5.1 Verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.7.5.2 -----NOTE----- Not required to be performed for the turbine driven AFW pump until 24 hours after ≥ 1005 psig in the steam generator. -----</p> <p>Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.</p>	<p>In accordance with the Inservice Testing Program</p>
<p>SR 3.7.5.3 -----NOTE----- Not applicable in MODE 4 when steam generator is relied upon for heat removal. -----</p> <p>Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.7.5.4 -----NOTES----- 1. Not required to be performed for the turbine driven AFW pump until 24 hours after ≥ 1005 psig in the steam generator. 2. Not applicable in MODE 4 when steam generator is relied upon for heat removal. -----</p> <p>Verify each AFW pump starts automatically on an actual or simulated actuation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.5	Verify proper alignment of the required AFW flow paths by verifying flow from the emergency condensate storage tank to each steam generator.	Prior to entering MODE 3, whenever unit has been in MODE 5, 6, or defueled for a cumulative period > 30 days

3.7 PLANT SYSTEMS

3.7.6 Emergency Condensate Storage Tank (ECST)

LCO 3.7.6 The ECST shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ECST inoperable.	A.1 Verify by administrative means OPERABILITY of Condensate Storage Tank.	4 hours <u>AND</u> Once per 12 hours thereafter
	<u>AND</u> A.2 Restore ECST to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4, without reliance on steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.6.1 Verify the ECST contains $\geq 110,000$ gal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.7 Secondary Specific Activity

LC0 3.7.7 The specific activity of the secondary coolant shall be $\leq 0.10 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.7.1 Verify the specific activity of the secondary coolant is $\leq 0.10 \mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Actions and associated Completion Times of Conditions A, B or C not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 5.	36 hours
E. Two SW System loops inoperable for reasons other than only two SW pumps being OPERABLE.	E.1 Be in MODE 4.	12 hours
	<u>AND</u> E.2 Initiate actions to be in MODE 5.	13 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.8.1 -----NOTE----- Isolation of SW flow to individual components does not render the SW System inoperable. ----- Verify each SW System manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.8.2 Verify each SW System automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.3	Verify each SW pump starts automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The UHS shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. UHS inoperable.	A.1 Be in MODE 3.	6 hours
	<u>AND</u> A.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.9.1 Verify water level of the Service Water Reservoir is \geq 313 ft mean sea level.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2 Verify average water temperature of the Service Water Reservoir is \leq 95°F.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. (continued) <u>OR</u> Two required MCR/ESGR EVS trains inoperable during movement of recently irradiated fuel assemblies for reasons other than Condition B.		
F. Two required MCR/ESGR EVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.10.1 Operate each required MCR/ESGR EVS train for ≥ 10 continuous hours with the heaters operating.	In accordance with the Surveillance Frequency Control Program
SR 3.7.10.2 Perform required MCR/ESGR EVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.3 Not Used	

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Less than 100% of the MCR/ESGR ACS cooling equivalent to a single OPERABLE MCR/ESGR ACS subsystem available in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.11.1 Verify each required MCR/ESGR ACS chiller has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two ECCS PREACS trains inoperable due to inoperable ECCS pump room boundary affecting filtration capability.	D.1.1 Verify ECCS leakage log is less than the maximum allowable unfiltered leakage.	1 hour
	<u>AND</u>	
	D.1.2 Verify by field walkdown that ECCS leakage is less than the maximum allowable unfiltered leakage.	Once per 12 hours thereafter
	<u>AND</u>	
	D.1.3 Restore ECCS pump room boundary to OPERABLE status.	14 days
	<u>OR</u>	
	D.2 Restore ECCS pump room boundary to OPERABLE status.	24 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	E.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.12.1 Operate each ECCS PREACS train for ≥ 10 continuous hours with the heaters operating.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.12.2 Actuate each ECCS PREACS train by aligning Safeguards Area exhaust flow and Auxiliary Building Central exhaust flow through the Auxiliary Building HEPA filter and charcoal adsorber assembly.	In accordance with the Surveillance Frequency Control Program
SR 3.7.12.3 Perform required ECCS PREACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.4 Verify Safeguards Area exhaust flow is diverted and each Auxiliary Building filter bank is actuated on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.12.5 Verify one ECCS PREACS train can maintain a negative pressure relative to adjacent areas during post accident mode of operation.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.15 Fuel Building Ventilation System (FBVS)

LCO 3.7.15 The FBVS shall be OPERABLE and in operation.

----- NOTE -----
The fuel building boundary may be opened intermittently under administrative control.

APPLICABILITY: During movement of recently irradiated fuel assemblies in the fuel building.

ACTIONS

----- NOTE -----
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. FBVS inoperable. <u>OR</u> FBVS not in operation.	A.1 Suspend movement of recently irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.15.1 Verify the FBVS can maintain a pressure ≤ -0.125 inches water gauge with respect to atmospheric pressure.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.16 Fuel Storage Pool Water Level

LCO 3.7.16 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool water level not within limit.	<p>A.1 -----NOTE----- LCO 3.0.3 is not applicable. -----</p> <p>Suspend movement of irradiated fuel assemblies in the fuel storage pool.</p>	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.16.1 Verify the fuel storage pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks.	In accordance with the Surveillance Frequency Control Program

3.7 PLANT SYSTEMS

3.7.17 Fuel Storage Pool Boron Concentration

LCO 3.7.17 The fuel storage pool boron concentration shall be
 ≥ 2600 ppm.

APPLICABILITY: When fuel assemblies are stored in the fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool boron concentration not within limit.	-----NOTE----- LCO 3.0.3 is not applicable. -----	
	A.1 Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	<u>AND</u> A.2 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.17.1 Verify the fuel storage pool boron concentration is within limit.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.19.1 Verify each CC manual, power operated, and automatic valve in the flow path servicing the residual heat removal system, that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.1 Verify correct breaker alignment and indicated power availability for each required offsite circuit.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.2 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All EDG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. 2. A modified EDG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met. <p>-----</p> <p>Verify each required EDG starts from standby conditions and achieves steady state voltage ≥ 3740 V and ≤ 4580 V, and frequency ≥ 59.5 Hz and ≤ 60.5 Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.3 -----NOTES-----</p> <ol style="list-style-type: none"> 1. EDG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one EDG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 or SR 3.8.1.7. <p>-----</p> <p>Verify each required EDG is synchronized and loaded and operates for ≥ 60 minutes at a load ≥ 2500 kW and ≤ 2600 kW.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.4 Verify each required day tank contains ≥ 450 gal of fuel oil.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.5 Check for and remove accumulated water from each required day tank.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.6 Verify each required fuel oil transfer pump operates to transfer fuel oil from the storage tank to the day tank.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.7 -----NOTE----- All EDG starts may be preceded by an engine prelube period. -----</p> <p>Verify each required EDG starts from standby condition and achieves</p> <ul style="list-style-type: none"> a. In ≤ 10 seconds, voltage ≥ 3960 V and frequency ≥ 59.5 Hz; and b. Steady state voltage ≥ 3740 V and ≤ 4580 V, and frequency ≥ 59.5 Hz and ≤ 60.5 Hz. 	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.8 -----NOTES-----</p> <ul style="list-style-type: none"> 1. This Surveillance is only applicable to Unit 1. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. <p>-----</p> <p>Verify manual transfer of AC power sources from the normal offsite circuit to the alternate required offsite circuit.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.9 -----NOTE----- If performed with EDG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition, the power factor shall be maintained as close to the limit as practicable. ----- Verify each required EDG rejects a load greater than or equal to its associated single largest post-accident load, and:</p> <ol style="list-style-type: none"> Following load rejection, the frequency is ≤ 66 Hz; Within 3 seconds following load rejection, the voltage is ≥ 3740 V and ≤ 4580 V; and Within 3 seconds following load rejection, the frequency is ≥ 59.5 Hz and ≤ 60.5 Hz. 	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.10 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All EDG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal:</p> <ol style="list-style-type: none"> a. De-energization of emergency buses; b. Load shedding from emergency buses; c. Each required EDG auto-starts from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads through sequencing timing relays, 3. maintains steady state voltage ≥ 3740 V and ≤ 4580 V, 4. maintains steady state frequency ≥ 59.5 Hz and ≤ 60.5 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes. 	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.11 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All EDG starts may be preceded by prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. <p>-----</p> <p>Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each LCO 3.8.1.b EDG auto-starts from standby condition and:</p> <ol style="list-style-type: none"> a. In ≤ 10 seconds after auto-start and during tests, achieves voltage ≥ 3960 V and frequency ≥ 59.5 Hz; b. Achieves steady state voltage ≥ 3740 V and ≤ 4580 V and frequency ≥ 59.5 Hz and ≤ 60.5 Hz; c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized or auto-connected through the sequencing timing relays from the offsite power system. 	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.12 -----NOTE----- This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. ----- Verify each required EDG's automatic trips are bypassed on actual or simulated automatic start signals except:</p> <ul style="list-style-type: none"> a. Engine overspeed; and b. Generator differential current. 	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.13 -----NOTES-----</p> <ol style="list-style-type: none"> 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. 3. If performed with EDG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. <p>-----</p> <p>Verify each required EDG operates for ≥ 24 hours:</p> <ol style="list-style-type: none"> a. For ≥ 2 hours loaded ≥ 2900 kW and ≤ 3000 kW; and b. For the remaining hours of the test loaded ≥ 2500 kW and ≤ 2600 kW. 	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.14 -----NOTES-----</p> <p>1. This Surveillance shall be performed within 5 minutes of shutting down the EDG after the EDG has operated ≥ 2 hours loaded ≥ 2500 kW and ≤ 2600 kW or after operating temperatures have stabilized.</p> <p>Momentary transients outside of load range do not invalidate this test.</p> <p>2. All EDG starts may be preceded by an engine prelube period.</p> <p>-----</p> <p>Verify each required EDG starts and achieves</p> <p>a. In ≤ 10 seconds, voltage ≥ 3960 V and frequency ≥ 59.5 Hz; and</p> <p>b. Steady state voltage ≥ 3740 V, and ≤ 4580 V and frequency ≥ 59.5 Hz and ≤ 60.5 Hz.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
<p>SR 3.8.1.15 -----NOTE-----</p> <p>This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced.</p> <p>-----</p> <p>Verify each required EDG:</p> <p>a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power;</p> <p>b. Transfers loads to offsite power source; and</p> <p>c. Returns to ready-to-load operation.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.16 -----NOTE----- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. ----- Verify each required sequencing timing relay is within the design tolerance.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.17 -----NOTES-----</p> <ol style="list-style-type: none"> 1. All EDG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. <p>-----</p> <p>Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal:</p> <ol style="list-style-type: none"> a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. Each LCO 3.8.1.b EDG auto-starts from standby condition and: <ol style="list-style-type: none"> 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencing timing relays, 3. achieves steady state voltage ≥ 3740 V and ≤ 4580 V, 4. achieves steady state frequency ≥ 59.5 Hz and ≤ 60.5 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes. 	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.1.18 -----NOTE----- All EDG starts may be preceded by an engine prelube period. ----- Verify when started simultaneously from standby condition, each LCO 3.8.1.b EDG achieves:</p> <ul style="list-style-type: none"> a. in ≤ 10 seconds, voltage ≥ 3960 V and frequency ≥ 59.5 Hz; and b. steady state voltage ≥ 3740 V and ≤ 4580 V, and frequency ≥ 59.5 Hz and ≤ 60.5 Hz. 	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. Required Action and associated Completion Time not met.</p> <p><u>OR</u></p> <p>One or more EDGs diesel fuel oil or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.</p>	<p>F.1 Declare associated EDG(s) inoperable.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.3.1 Verify fuel oil inventory \geq 90,000 gal.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.2 Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.3 Verify each EDG air start receiver pressure is \geq 175 psig.	In accordance with the Surveillance Frequency Control Program
SR 3.8.3.4 Check for and remove accumulated water from each stored fuel oil storage tank.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. -----NOTE----- Separate Condition entry is allowed for each DC subsystem. -----</p> <p>One or more required LCO 3.8.4.c DC electrical power subsystem(s) inoperable.</p>	D.1 Declare associated shared component(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.1 Verify for each required Station and EDG battery, terminal voltage is ≥ 129 V on float charge.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.8.4.2 Verify for each required Station and EDG battery, there is no visible corrosion at battery terminals and connectors.</p> <p><u>OR</u></p> <p>Verify battery connection resistance is $\leq 1.5E-4$ ohm for inter-cell connections, $\leq 1.5E-4$ ohm for inter-rack connections, $\leq 1.5E-4$ ohm for inter-tier connections, and $\leq 1.5E-4$ ohm for terminal connections.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.8.4.3 Verify for each required Station and EDG battery, cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.</p>	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.4	For each required Station and EDG battery, remove visible terminal corrosion, verify battery cell to cell and terminal connections are clean and coated with anti-corrosion material.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.5	Verify for each required Station and EDG battery, connection resistance is $\leq 1.5E-4$ ohm for inter-cell connections, $\leq 1.5E-4$ ohm for inter-rack connections, $\leq 1.5E-4$ ohm for inter-tier connections, and $\leq 1.5E-4$ ohm for terminal connections.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.6	Verify each required Station battery charger supplies ≥ 270 amps at ≥ 125 V for ≥ 4 hours.	In accordance with the Surveillance Frequency Control Program
SR 3.8.4.7	Verify each required EDG battery charger supplies ≥ 10 amps at ≥ 125 V for ≥ 4 hours.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.8 -----NOTES-----</p> <ol style="list-style-type: none"> 1. The modified performance discharge test in SR 3.8.4.9 may be performed in lieu of the service test in SR 3.8.4.8. 2. The performance discharge test in SR 3.8.4.9 may be performed in lieu of the service test in SR 3.8.4.8. 3. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. <p>-----</p> <p>Verify for each required Station battery, capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.4.9 -----NOTE----- This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4 for Station batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the unit is maintained or enhanced. ----- Verify for each required Station and EDG battery, capacity is $\geq 80\%$ of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.</p>	<p>In accordance with the Surveillance Frequency Control Program <u>AND</u> 18 months when battery shows degradation or has reached 85% of expected life</p>

Battery Cell Parameters
3.8.6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.3 Restore battery cell parameters to Table 3.8.6-1 Category A and B limits.	31 days
<p>B. Required Action and associated Completion Time of Condition A not met.</p> <p><u>OR</u></p> <p>One or more Station batteries with average electrolyte temperature of the representative cells < 60°F.</p> <p><u>OR</u></p> <p>One or more Station or EDG batteries with one or more battery cell parameters not within Table 3.8.6-1 Category C values.</p>	B.1 Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.6.1 Verify for each required Station and EDG battery cell parameters meet Table 3.8.6-1 Category A limits.	In accordance with the Surveillance Frequency Control Program

Battery Cell Parameters
3.8.6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.6.2 Verify for each required Station and EDG battery cell parameters meet Table 3.8.6-1 Category B limits.</p>	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Once within 24 hours after a battery discharge < 110 V</p> <p><u>AND</u></p> <p>Once within 24 hours after a battery overcharge > 150 V</p>
<p>SR 3.8.6.3 Verify average electrolyte temperature of representative cells for each required Station battery is $\geq 60^{\circ}\text{F}$.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more inverters required by LCO 3.8.7.b inoperable.	<p>B.1 -----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems-Operating" with any vital bus de-energized. -----</p> <p>Declare associated shared components inoperable.</p>	7 days
C. Required Action and associated Completion Time of Condition A not met.	<p>C.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>C.2 Be in MODE 5.</p>	<p>6 hours</p> <p>36 hours</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.7.1 Verify correct inverter voltage and alignment to required AC vital buses.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage and alignments to required AC vital buses.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>F. -----NOTE----- Separate Condition entry is allowed for each AC vital subsystem. -----</p> <p>One or more required LCO 3.8.9.b AC vital electrical power distribution subsystem(s) inoperable.</p>	<p>F.1 Declare associated shared components inoperable.</p>	<p>Immediately</p>
<p>G. Required Action and associated Completion Time for Condition A, B, or C not met.</p>	<p>G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 5.</p>	<p>6 hours 36 hours</p>
<p>H. Two or more LCO 3.8.9.a electrical power distribution subsystems inoperable that result in a loss of safety function.</p>	<p>H.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.9.1 Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.4 Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
	<p style="text-align: center;"><u>AND</u></p> A.2.5 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.10.1 Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

LCO 3.9.1 Boron concentrations of the Reactor Coolant System (RCS), the refueling canal, and the refueling cavity shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

----- NOTE -----
Only applicable to the refueling canal and refueling cavity when connected to the RCS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2 Suspend positive reactivity additions.	Immediately
	<u>AND</u>	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.1.1 Verify boron concentration is within the limit specified in the COLR.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.3.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.9.3.2 -----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. ----- Perform CHANNEL CALIBRATION.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.4.1 Verify each required containment penetration is in the required status.	In accordance with the Surveillance Frequency Control Program
SR 3.9.4.2 -----NOTE----- Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1. ----- Verify each required containment purge and exhaust valve actuates to the isolation position on manual initiation.	In accordance with the Surveillance Frequency Control Program

RHR and Coolant Circulation-High Water Level
3.9.5

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.4 Close equipment hatch and secure with four bolts.	4 hours
	<u>AND</u>	
	A.5 Close one door in each installed air lock.	4 hours
	<u>AND</u>	
	A.6.1 Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent.	4 hours
	<u>OR</u>	
	A.6.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.5.1 Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of ≥ 3000 gpm.	In accordance with the Surveillance Frequency Control Program

RHR and Coolant Circulation—Low Water Level
3.9.6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.5.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.	4 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.9.6.1 Verify one RHR loop is in operation and circulating reactor coolant at a flow rate of:</p> <p style="margin-left: 40px;">a. ≥ 3000 gpm, or</p> <p style="margin-left: 40px;">b. ≥ 2000 gpm if RCS temperature $\leq 140^{\circ}\text{F}$ and time since entry into MODE 3 ≥ 100 hours.</p>	In accordance with the Surveillance Frequency Control Program
<p>SR 3.9.6.2 -----NOTE-----</p> <p>Not required to be performed until 24 hours after a required RHR pump is not in operation.</p> <p>-----</p> <p>Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation.</p>	In accordance with the Surveillance Frequency Control Program

3.9 REFUELING OPERATIONS

3.9.7 Refueling Cavity Water Level

LCO 3.9.7 Refueling cavity water level shall be maintained ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within containment.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling cavity water level not within limit.	A.1 Suspend movement of irradiated fuel assemblies within containment.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.9.7.1 Verify refueling cavity water level is ≥ 23 ft above the top of reactor vessel flange.	In accordance with the Surveillance Frequency Control Program

5.5 Programs and Manuals

5.5.16 Main Control Room/Emergency Switchgear Room Envelope Habitability Program (MCR/ESGR) (continued)

- e. The quantitative limits on unfiltered air leakage into the MCR/ESGR envelope. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of design basis accident consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of MCR/ESGR envelope occupants to these hazards will be within the assumptions in the licensing basis.
- f. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing MCR/ESGR envelope habitability, determining MCR/ESGR envelope unfiltered leakage, and measuring MCR/ESGR envelope pressure and assessing the MCR/ESGR envelope boundary as required by paragraphs c and d, respectively.

5.5.17 Surveillance Frequency Control Program

This program provides controls for Surveillance Frequencies. The program shall ensure that Surveillance Requirements specified in the Technical Specification are performed at interval sufficient to assure the associated Limiting Conditions for Operation are met.

- a. The Surveillance Frequency Control Program shall contain a list of Frequencies of those Surveillance Requirements for which the Frequency is controlled by the program.
 - b. Changes to the Frequencies listed in the Surveillance Frequency Control Program shall be made in accordance with NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies," Revision 1.
 - c. The provisions of Surveillance Requirements 3.0.2 and 3.0.3 are applicable to the Frequencies established in the Surveillance Frequency Control Program.
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