

CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of required alarm, interlock, display, and trip functions. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required range and accuracy.
CORE ALTERATIONS	CORE ALTERATIONS shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the plant specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in ICRP 30, Supplement to Part 1, pages 192-212, table entitled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity."
\bar{E} - AVERAGE DISINTEGRATION ENERGY	\bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies (in MeV) per disintegration for non-iodine isotopes, with half lives > 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

3.3 INSTRUMENTATION

3.3.6 Control Room Emergency Air Treatment System (CREATS) Actuation Instrumentation

LCO 3.3.6 The CREATS actuation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6-1.

ACTIONS

- NOTE -

Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	A.1 Place one CREATS train in emergency mode.	7 days
B. One or more Functions with two channels or two trains inoperable.	B.1.1 Place one CREATS train in emergency mode.	Immediately
	<u>AND</u>	
	B.1.2 Enter applicable Conditions and Required Actions for one CREATS train made inoperable by inoperable CREATS actuation instrumentation.	Immediately
	<u>OR</u>	
	B.2 Place both CREATS trains in emergency mode.	Immediately
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 5.	36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A or B not met during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

- NOTE -

Refer to Table 3.3.6-1 to determine which SRs apply for each CREATS Actuation Function.

SURVEILLANCE	FREQUENCY
SR 3.3.6.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.6.2 Perform COT.	92 days
SR 3.3.6.3 - NOTE - Verification of setpoint is not required.	
Perform TADOT.	24 months
SR 3.3.6.4 Perform CHANNEL CALIBRATION.	24 months
SR 3.3.6.5 Perform ACTUATION LOGIC TEST.	24 months

Table 3.3.6-1
CREATS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	LIMITING SAFETY SYSTEM SETTINGS ^(a)
1. Manual Initiation	1, 2, 3, 4, (b)	2 trains	SR 3.3.6.3	NA
2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4, (b)	2 trains	SR 3.3.6.5	NA
3. Control Room Radiation Intake Monitors	1, 2, 3, 4, (b)	2	SR 3.3.6.1 SR 3.3.6.2 SR 3.3.6.4	≤ .57 mR/hr
4. Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.			

(a)

A channel is OPERABLE when both of the following conditions are met:

1. The absolute difference between the as-found Trip Setpoint (TSP) and the previous as-left TSP is within the COT Acceptance Criteria. The COT Acceptance Criteria is defined as:

$$|\text{as-found TSP} - \text{previous as-left TSP}| \leq \text{COT uncertainty}$$

The COT uncertainty shall not include the calibration tolerance.

2. The as-left TSP is within the established calibration tolerance band about the nominal TSP. The nominal TSP is the desired setting and shall not exceed the Limiting Safety System Setting (LSSS). The LSSS, COT uncertainty, and the established calibration tolerance band are defined in accordance with the Ginna instrument setpoint methodology. The channel is considered operable even if the as-left TSP is non-conservative with respect to the LSSS provided that the as-left TSP is within the established calibration tolerance band.

(b) During movement of irradiated fuel assemblies

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,
MODE 3 with RCS average temperature (T_{avg}) \geq 500°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 specific activity not within limit.	----- - NOTE - ----- LCO 3.0.4 is not applicable. -----	
	A.1 Verify DOSE EQUIVALENT I-131 \leq 60 μ Ci/gm.	Once per 8 hours
	<u>AND</u>	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	7 days
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> DOSE EQUIVALENT I-131 specific activity > 60 μ Ci/gm.	B.1 Be in MODE 3 with T_{avg} < 500°F.	8 hours
C. Gross specific activity not within limit.	C.1 Be in MODE 3 with T_{avg} < 500°F.	8 hours

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray (CS), Containment Recirculation Fan Cooler (CRFC), and NaOH Systems

LCO 3.6.6 Two CS trains, four CRFC units, and the NaOH system shall be OPERABLE.

- NOTE -

In MODE 4, both CS pumps may be in pull-stop for up to 2 hours for the performance of interlock and valve testing of motor operated valves (MOV) 857A, 857B, and 857C. Power may also be restored to MOVs 896A and 896B, and the valves placed in the closed position, for up to 2 hours for the purpose of each test.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CS train inoperable.	A.1 Restore CS train to OPERABLE status.	72 hours
B. NaOH system inoperable.	B.1 Restore NaOH System to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 5.	84 hours
D. One or two CRFC units inoperable.	D.1 Restore CRFC unit(s) to OPERABLE status.	7 days
E. Required Action and associated Completion Time of Condition D not met.	E.1 Be in MODE 3.	6 hours
	<u>AND</u> E.2 Be in MODE 5.	36 hours

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Two CS trains inoperable. <u>OR</u> Three or more CRFC units inoperable.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6.1	Perform SR 3.5.2.1 and SR 3.5.2.3 for valves 896A and 896B.	In accordance with applicable SRs.
SR 3.6.6.2	Verify each CS 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.	31 days
SR 3.6.6.3	Verify each NaOH 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.	31 days
SR 3.6.6.4	Operate each CRFC unit for ≥ 15 minutes.	31 days
SR 3.6.6.5	Verify cooling water flow through each CRFC unit.	31 days
SR 3.6.6.6	Verify each CS 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 3.6.6.7	Verify NaOH System solution volume is ≥ 3000 gal.	184 days
SR 3.6.6.8	Verify NaOH System tank NaOH solution concentration is $\geq 30\%$ and $\leq 35\%$ by weight.	184 days
SR 3.6.6.9	Perform required CRFC unit testing in accordance with the VFTP.	In accordance with the VFTP
SR 3.6.6.10	Verify each automatic CS 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.	24 months

SURVEILLANCE		FREQUENCY
SR 3.6.6.11	Verify each CS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.6.6.12	Verify each CRFC unit starts automatically on an actual or simulated actuation signal.	24 months
SR 3.6.6.13	Verify each automatic NaOH System 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.	24 months
SR 3.6.6.14	Verify spray additive flow through each eductor path.	5 years
SR 3.6.6.15	Verify each spray nozzle is unobstructed.	10 years

3.7 PLANT SYSTEMS

3.7.9 Control Room Emergency Air Treatment System (CREATS)

LCO 3.7.9 Two CREATS Trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATS train inoperable.	A.1 Restore CREATS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies.	C.1 Suspend movement of irradiated fuel assemblies.	Immediately
D. Two CREATS trains inoperable in MODE 1, 2, 3, or 4.	D.1 Enter LCO 3.0.3.	Immediately
E. Two CREATS trains inoperable during movement of irradiated fuel assemblies.	E.1 Suspend movement of irradiated fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	Operate each CREATS filtration train \geq 15 minutes.	31 days
SR 3.7.9.2	Perform required CREATS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.9.3	Verify each CREATS train actuates on an actual or simulated actuation signal.	24 months

- b. SG tubes that have imperfections > 40% through wall, as indicated by eddy current, shall be repaired by plugging or sleeving.
- c. SG sleeves that have imperfections > 30% through wall, as indicated by eddy current, shall be repaired by plugging.

5.5.9

Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. This program shall include:

- a. Identification of a sampling schedule for the critical variables and control points for these variables;
- b. Identification of the procedures used to measure the values of the critical variables;
- c. Identification of process sampling points;
- d. Procedures for the recording and management of data;
- e. Procedures defining corrective actions for all off control point chemistry conditions; and
- f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.10

Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature filter ventilation systems and the Spent Fuel Pool (SFP) Charcoal Adsorber System. The test frequencies will be in accordance with Regulatory Guide 1.52, Revision 2, except that in lieu of 18 month test intervals, a 24 month interval will be implemented. The test methods will be in accordance with Regulatory Guide 1.52, Revision 2, except as modified below.

- a. Containment Recirculation Fan Cooler System
 - 1. Demonstrate the pressure drop across the high efficiency particulate air (HEPA) filter bank is < 3 inches of water at a design flow rate ($\pm 10\%$).
 - 2. Demonstrate that an in-place dioctylphthalate (DOP) test of the HEPA filter bank shows a penetration and system bypass < 1.0%.

- b. Control Room Emergency Air Treatment System (CREATS)
 1. Demonstrate the pressure drop across the combined HEPA filters, the prefilters, the charcoal adsorbers and the post-filters is < 11 inches of water at a design flow rate ($\pm 10\%$).
 2. Demonstrate that an in-place DOP test of the HEPA filter bank shows a penetration and system bypass < 0.05%.
 3. Demonstrate that an in-place Freon test of the charcoal adsorber bank shows a penetration and system bypass < 0.05%, when tested under ambient conditions.
 4. Demonstrate that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows a methyl iodide penetration of less than 1.5% when tested in accordance with ASTM D3803-1989 at a test temperature of 30°C (86°F), a relative humidity of 95%, and a face velocity of 61 ft/min.

- c. SFP Charcoal Adsorber System
 1. Demonstrate that the total air flow rate from the charcoal adsorbers shows at least 75% of that measured with a complete set of raw adsorbers.
 2. Demonstrate that an in-place Freon test of the charcoal adsorbers bank shows a penetration and system bypass < 1.0%, when tested under ambient conditions.
 3. Demonstrate that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows a methyl iodide penetration of less than 14.5% when tested in accordance with ASTM D3803-1989 at a test temperature of 30°C (86°F) and a relative humidity of 95%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP frequencies.

5.5.11

Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas decay tanks and the quantity of radioactivity contained in waste gas decay tanks. The gaseous radioactivity quantities shall be determined following the methodology in NU REG-0133.

The program shall include:

- a. The limits for concentrations of hydrogen and oxygen in the waste gas decay tanks and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion); and
- b. A surveillance program to ensure that the quantity of radioactivity contained in each waste gas decay tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.12

Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 1. an API gravity or an absolute specific gravity within limits,
 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 3. a clear and bright appearance with proper color; and
- b. Within 31 days following addition of the new fuel to the storage tanks, verify that the properties of the new fuel oil, other than those addressed in a. above, are within limits for ASTM 2D fuel oil.

5.5.13

Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license; or
 2. A change to the UFSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the UFSAR.
 - d. Proposed changes that meet the criteria of Specification 5.5.13.b.1 or Specification 5.5.13.b.2 shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71e.

5.5.14

Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

- a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;
- b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;
- c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and
- d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

- a. A required system redundant to the supported system(s) is also inoperable; or
- b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

- c. A required system redundant to the inoperable support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

5.5.15

Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 60 psig.

The maximum allowable primary containment leakage rate, L_a , at P_a , shall be 0.2% of containment air weight per day.

Leakage Rate acceptance criteria are:

- a. Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During the first plant startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60 L_a$ for the Type B and Type C tests and $\leq 0.75 L_a$ for Type A tests;
- b. Air lock testing acceptance criteria are:
1. For each air lock, overall leakage rate is $\leq 0.05 L_a$ when tested at $\geq P_a$, and
 2. For each door, leakage rate is $\leq 0.01 L_a$ when tested at $\geq P_a$.
- c. Mini-purge valve acceptance criteria is $\leq 0.05 L_a$ when tested at $\geq P_a$.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.
