U.S. NUCLEAR REGULATORY COMMISSION

REGION 3

Docket No:	50-341
License No:	NPF-43
Report No:	50-341/96017
Licensee:	Detroit Edison Company (DECo)
Facility:	Enrico Fermi, Unit 2
Location:	6400 N. Dixie Hwy. Newport, MI 48166
Dates:	October 4, 1996 through December 6, 1996
Inspectors:	A. Vegel, Senior Resident Inspector C. O'Keefe, Resident Inspector A. Kugler, Fermi 2 Project Manager, NRR
Approved by:	Michael J. Jordan, Chief, Branch 5 Division of Reactor Projects

EXECUTIVE SUMMARY

Enrico Fermi, Unit 2
NRC Inspection Report 50-341/96017

- On October 4, 1996, cross-tie valves to the Residual Heat Removal (RHR) reservoirs were rendered inoperable. Operators failed to recognize that the condition exceeded a Technical Specification (TS) Limiting Condition of Operation (LCO). Once the condition was recognized, and actions to cross-tie the reservoirs were taken, operators failed to evaluate plant indications. Operators inappropriately determined that the reservoirs were cross-tied when one valve had failed in the closed position and level indications reasonably demonstrated that the reservoirs were isolated. This rendered the Ultimate Heat Sink (UHS) unavailable, and various safety systems inoperable. The plant was in a condition prohibited by TS for greater than 28 hours. This is an apparent violation of several cascaded TS.

- On October 13, 1996, the Onsite Review Safety Organization (ORSO) inappropriately approved a Technical Specification Clarification (TSC) in an attempt to operate the plant in a condition that was prohibited by TS rather than requesting a Notice of Enforcement Discretion (NOED) or an amendment to the TS. This is an apparent violation of TS.

- On November 4, 1996, the plant re-entered operational Mode 5 without performing TS required surveillance testing of the Control Rod Block Instrumentation. This is an apparent violation of TS.

These apparent violations were due to several significant root causes:

- One of the RHR reservoir cross-tie valves' (Valve F601A) disk separated from the valve operator. A set screw on the spline was not tuck welded, as required, to prevent the screw becoming loose and the disc from disconnecting from the spline.

- Established periodic testing of the RHR reservoir cross-tie valves would not have detected the valve malfunction.

- Operators and work planners failed to recognize the effect de-energizing bus 72ED had on the UHS. The planners and approving organizations of the maintenance activity did not recognize that TS LCO had been entered.

- Operators performed an operability evolution of the UHS using non-seismic instrumentation in lieu of valid safety-related and seismic instrumentation that they believed was malfunctioning.

- Licensee made a TS interpretation to allow disregarding a valid TS requirement. This was due to insufficient knowledge of the regulatory requirements.

- Poor communications between maintenance and operations personnel were a major contributor to missing a TS surveillance. This was compounded by insufficient knowledge of technical specifications and inadequate control of work activities on the refueling floor.

- Inadequate procedure in that all RPV bolting activities were not completed prior to declaring a change to Mode 4.

Report Details

The inspectors reviewed several events that occurred during the refueling outage. The inspectors independently interviewed plant personnel and evaluated event logs and data.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

On three occasions during the refueling outage, between October 4 and November 4, 1996, technical specification requirements were not met. Two of the three events are discussed below in the OPERATIONS area while the third is discussed in the MAINTENANCE area.

O1.2 Residual Heat Removal (RHR) Reservoir Cross-Tie Lines Were Not Opened per Technical Specification (TS) Requirements

a. Inspection Scope (93702)

The inspectors independently reviewed the various documentation associated with the October 4, 1996 loss of cross-tie capability to the RHR reservoirs. The inspectors also interviewed the appropriate operations personnel and management.

b. Observations and Findings

On October 4, Operations deenergized bus 72ED in preparation for maintenance. This action removed power to motor operated valves (MOVs) E1150-F602A and F602B. These MOVs are in one of two cross-tie lines for the Residual Heat Removal (RHR) reservoirs. Technical Specification (TS) 3.7.1.5, Action C, requires that with one cross-tie line for the Ultimate Heat Sink (UHS) RHR reservoir inoperable, the valves in the other cross-tie line shall be opened and deenergized within eight hours. About Eight hours and nine minutes after one cross-tie line was rendered inoperable, licensed operators realized that this action statement had not been completed, so the UHS was declared inoperable. The operating division of shutdown cooling was declared inoperable as a result, which was reported to the NRC Operations Center per 50.72(b)(2)(iii)(b). The cross-tie valves in the other division (E1150-F601A and F601B) were promptly opened and deenergized as required. This event was documented in DER 96-1288.

Shortly after opening valves F601A and F601B to comply with Action C, control room operators identified that level indications between the two reservoirs did not agree, as should be expected with open cross-tie lines. A non-licensed operator was dispatched to compare local (non-seismic and non-safety related) indications. Each reservoir had two local level indicators, and the operator determined that three of the four agreed, with one of the detectors on the Division 1 reservoir reading higher. The operation shift was satisfied that the pools were successfully cross-tied. Operations considered the UHS to be operable.

About 28 hours after the original de-energizing of bus 72ED, water was added to the Division 1 reservoir with no noticeable change in the Division 2 reservoir water level. The UHS level divergence was investigated, and operators determined that the pools were not cross-tied. Divers were sent into the UHS and determined that the F601A valve was actually shut while it indicated open. The motor operated actuator did not cause valve movement. Operators then opened the other cross-tie valves to comply with TS 3.7.1.5, Action C. Subsequent investigation by the licensee identified a loose set screw in the bull gear on the F601A actuator. This event was documented in DER 96-1289.

c. Conclusions

The inspectors determined that on October 4, 1996, cross-tie valves to the Residual Heat Removal (RHR) reservoirs were rendered inoperable. Operators failed to recognize that the condition exceeded a Technical Specification (TS) Limiting Condition of Operation (LCO). Once the condition was recognized, and actions to cross-tie the reservoirs were taken, operators failed to evaluate plant indications. Operators inappropriately determined that the reservoirs were cross-tied when one valve had failed in the closed position and level indications reasonably demonstrated that the reservoirs were isolated. This rendered the Ultimate Heat Sink (UHS) and various safety systems inoperable.

The inspectors concluded that the plant was in a condition prohibited by TS for greater than 28 hours. This is an apparent violation of several cascaded TS.

TS 3.7.1.5 requires the Ultimate Heat Sink, comprised of two one-half capacity residual heat removal (RHR) reservoirs with the capability of being cross-connected, shall be OPERABLE with...(g) two reservoir cross-connect lines, each with two OPERABLE motor operated cross-connect valves.

- Action (c) of TS 3.7.1.5 requires with one or more reservoir cross-connect valves inoperable, within 8 hours open and de-energize both valves in at least one cross-connect line and verify that these valves remain open and de-energized at least once per 7 days. Otherwise, declare both reservoirs inoperable and take the ACTION of e. below.

- Action (e.2) of TS 3.7.1.5 requires that in OPERATIONAL CONDITIONS 4 or 5, declare RHRSW system, the EESW system and the diesel generator cooling water systems inoperable and take ACTION required by Specifications 3.7.1.1, 3.7.1.3 and 3.7.1.4.

Cascaded TS 3.7.1.1, ACTION (c) requires that in OPERATIONAL CONDITION 5 with the RHRSW subsystem(s), which is associated with an RHR loop required by Specification 3.9.11.1 inoperable, declare the associated RHR system inoperable and take ACTION required by Specification 3.9.11.1.

- TS 3.9.11.1, ACTION requires with no RHR shutdown cooling mode loop OPERABLE, within 1 hour and at least once per 24 hours

thereafter, verify the OPERABILITY of at least one alternate method capable of decay heat removal. Otherwise, suspend all operations involving an increase in the reactor decay heat load and establish SECONDARY CONTAINMENT INTEGRITY within 4 hours.

Cascaded TS 3.7.1.3, ACTION requires that with one EESW system subsystem inoperable, declare the associated EECW system subsystem inoperable and take the ACTION required by Specification 3.7.1.2.

- TS 3.7.1.2, ACTION (b) requires in OPERATIONAL CONDITION 4 or 5, determine the OPERABILITY of the safety-related equipment associated with an inoperable EECW system subsystem and take the ACTIONS required by the applicable Specifications.

Cascaded TS 3.7.1.4, ACTION requires with one or more diesel generator cooling water subsystems inoperable, declare the associated diesel generator inoperable and take the ACTION required by Specification 3.8.1.2.

- TS 3.8.1.2, ACTION (b) requires that with less than the above required A.C. electrical power sources [One onsite A.C. electrical power source, Division I or Division II, consisting of two emergency diesel generators] OPERABLE, suspend CORE ALTERATIONS, handling of irradiated fuel in the secondary containment, operations with a potential for draining the reactor vessel and crane operations over the spent fuel storage pool when fuel assemblies are stored within.

O1.3 Failure to Meet TS Requirements for Control Rods

a. Inspection Scope (93702)

The inspectors reviewed documentation associated with a October 13, 1996, On-site Review Safety Organization (ORSO) approved Technical Specification Clarification (TSC) 96-003. The inspectors also interviewed various operations personnel and management.

b. Observations and Findings

During the refueling outage, with several control rods withdrawn in defueled cells to permit reactor vessel inspections by camera, a problem was encountered with the refueling bridge. The withdrawn control rods had blade guides removed to permit room for inspection cameras, and thus could not be reinserted for lack of support. Reinstallation of blade guides would have required the use of the refueling bridge. However, the refueling bridge power supply cable shorted and was repaired during the camera inspections. When the problem with the bridge was repaired, the refueling bridge interlock surveillance was required to be performed before the bridge could be declared operable. This required briefly placing the mode switch in Startup to verify interlocks functioned. However, footnotes in Technical Specification Table 1.2 and Technical Specification Surveillance Requirement 4.9.1.1 to Technical Specification 3.9.1, required that all control rods be fully inserted

prior to placing the mode switch in a position other than Shutdown or Refuel for surveillance performance.

The inspectors determined that the footnotes were slightly different. The footnote to Table 1.2 stated "the reactor mode switch may be placed in Run, startup/Hot Standby, or Refuel position to test the switch interlock functions and related instrumentation provided that the control rods are verified to REMAIN FULLY INSERTED [capitals added for emphasis] by a second licensed operator or other technically qualified member of the unit technical staff." The footnote to the technical specification surveillance requirement stated "the reactor mode switch may be placed in the Run or Startup/Hot Standby position to test interlock functions provided that ALL [capitals added to emphasize the difference in the footnotes] control rods are verified to REMAIN FULLY INSERTED [capitals added for emphasis] by a second licensed operator or other technically qualified member of the unit technical staff." The clarification was written to interpret that "all control rods" of Specification 3.9.1 and that the term control rods applies only to "core cells containing fuel and does not include rods withdraw or removed in accordance with 3.9.10.2." This clarification is in agreement with Improved - Standard Technical Specifications; however, improved specifications are not approved for Fermi.

On October 13, ORSO approved Technical Specification Clarification (TSC) 96-003. Based on the interpretation contained in TSC 96-003, the refueling bridge interlock surveillance was performed on October 13, resulting in the Mode Switch being unlocked and placed in Run and Startup with some control rods withdrawn. Fermi did not request an amendment to their existing technical specifications or a waiver of the current requirements.

TS 3.9.10.2 requires that any number of control rods and/or control rod drive mechanisms may be removed from the core and/or reactor pressure vessel provided that at least the following requirements are satisfied until all control rods and control rod drive mechanisms are reinstalled and all control rods are inserted in the core....(a.) the reactor mode switch is OPERABLE and locked in the Shutdown position or in the Refuel position per Specification 3.9.1, except that the Refuel position "one-rod-out" interlock may be bypassed, as required, for those control rods and/or control rod drive mechanisms to be removed, after the fuel assemblies have been removed as specified in TS 3.9.10.2 (b through e).

c. Conclusions

The inspectors determined that operators had entered Technical Specification 3.9.10.2, to allow withdrawing the control rods for the inspections. This TS required that the mode switch remain locked in Refuel or Shutdown until all control rods were fully inserted. This was in conflicted with the licensee's use of TSC 96-003. At the Residents' request, NRR Technical Specification Branch reviewed this issue, and determined that Fermi should have complied with TS 3.9.10.2. The appropriate action should have been to request a NOED or amend their current technical specifications. This is an apparent violation of TS 3.9.10.2.

02.0 System Description

02.1 Description of the RHR Reservoir

The Fermi Ultimate Heat Sink (UHS) is comprised of two 50 percent Residual Heat Removal (RHR) reservoirs, which can be interconnected through either of two cross-tie lines, each containing two ball valves. The sink is divided to minimize the impact of a below grade breach of the reservoir but can be cross-connected to ensure the accident analysis volume of UHS water is available. The technical specification does not prohibit operation of the reservoirs either cross-connected or not cross-connected. Each line has a normally open valve with the other valve in the line normally closed.

03.0 Sequence of Events

The following sequence of events were determined by the inspectors from reviews of various parameter chart recording and process computer alarm recordings.

03.1 RHR Reservoir

11:11 am	October 4	Bus 72ED was de-energize rendering RHR reservoir cross-tie valves E1150-F602A and F602B inoperable. (This prevented cross-connection through the affected line) (The other cross-connect line has valve F601A closed and F601B open) Operating crew does not recognize that they were in an 8-hour LCO per T.S. 3.7.1.5, Action C.
7:20 pm	October 4	Operating crew recognize that they were in T.S. LCO. They declare the operating division of shutdown cooling inoperable. Valve F601A was directed to be opened (F601B was already open). Actions for TS 3.7.1.1, 3.7.1.3, and 3.7.1.4 were also entered. Operations verified that no core alterations or activities with the potential to drain the vessel were in progress or scheduled. TS 3.9.11.1 was the most limiting. Also, the following systems were affected; secondary containment, standby gas treatment, control center HVAC, D.C. power sources, A.C. power sources, and various electrical power components and systems.
7:41 pm	October 4	Valve F601A indicates open in the control room and operators believe that requirements of TS 3.7.1.5 and the associated cascading TS action requirements were met. The LCO Actions were exited.

Shortly after opening valve F601A:		Operators notice difference in RHR reservoir level on control room safety related indications. A operator was dispatched to investigate. Local, non-seismic level indications have 3 of 4 in agreement with each other. The fourth indicator was out of calibration since 1993 and could not be calibrated during several attempts since 1993. Operations crew determine that the cross-tie line was open and that the UHS was operable.
11:14 pm	October 4	With six minutes remaining of a required four-hour notification, NRC was notified via ENS (Event # 31100) of inoperable shutdown cooling. This notification was subsequently retracted on October 5 because the licensee determined that in addition to the loss of a cross-connect line, a division of electrical power would also be needed. Therefore, this was beyond the "alone" stipulation of the 10 CFR 50.72 criteria. (This was considered to be valid if valve F601A was OPEN).
1:49 pm	October 5	Water was added to the Division 1 RHR reservoir, operators noticed that the level in Division 2 did not change. (Observation of control room indications). A diver was requested to inspect the cross-tie line valves.
3:49 pm	October 5	Valve F602B (one of the two originally affected when bus 72ED was de-energized) was manually opened and valve F601A was closed for inspection of the reservoir by the diver. With completion of this action, unbeknownst to the operators, the UHS was returned to operable status.
5:00 pm (about)	October 5	Operators observed that the indications for the two reservoirs were equalizing. Division I reservoir was increasing and the Division II was decreasing to an equalization level. Operations determined that the cross-connection through valves F601A/B (established at 7:41 pm on October 4) was not open. It was determined that TS 3.7.1.5 and cascading TS 3.9.11.1 was not met (since TS 3.7.1.1, 3.7.1..3, and 3.7.1.4 were exited on October 4, they were also not met and not recognized by the licensee). The plant was determined to be in a condition prohibited by TS.

1:59 pm	October 6	NRC was updated via ENS. The original 11:14 pm on October 4 notification was updated and in effect nullified the retraction. Update does not clearly state that T.S. 3.7.1.5 was not met for the entire period.
LATER		Diver determines that valve F601A did not open when operated from the control room (valve position lights indicated open).
	October 21	The failure of valve F601A was determined to be a loose set screw on the valve operator spline bushing.

03.2 Failure to Meet TS Requirements for Control Rods

	Sept 27	Plant was shutdown for fifth refueling outage
	October 11	First fuel shuffle completed. At stopping point, a number of peripheral cells were defueled, the control rods withdrawn, and the blade guides removed. In-vessel camera inspections were begun.
9:50 pm	October 11	Refueling bridge blew a main line fuse. Investigation shows the collector brush assembly for the power cable takeup reel shorted. Enter LCO 96-0572
	October 13	OSRO approves Technical Specification Clarification 96-003 to permit retesting refueling bridge.
1:30 pm	October 13	Surveillance 24.623, "Reactor Manual Control/Reactor Mode Switch/Refueling Platform - Refueling Interlocks," performed. Mode Switch in Startup/Hot Standby for about 47 minutes, in Run for about 7 minutes. Returned to Refuel and locked upon completion.
6:30 pm	October 13	Exit LCO 96-0572. Refueling bridge declared operable.

4.0 Root Cause and Major Contributors to the Events

Based on interviews of appropriate personnel, the inspectors determined the following root causes and contributors existed during and prior to the events.

04.1 RHR Reservoir

The following factors contributed to the event.

- One of the RHR reservoir cross-tie valves (Valve F601A) disk separated from the valve operator. A set screw on the spline was not tacked to prevent loosening and becoming disconnected.
- Operators and work planners failed to recognize the effect of de-energizing bus 72ED had on the UHS.
- Operators did not recognize that the plant was in a condition requiring action to meet an LCO.
- Operators performed an operability assessment of the UHS using non-seismic instrumentation in lieu of valid safety related and seismic instrumentation that they believed was malfunctioning.

04.2 Failure to Meet TS Requirements for Control Rods

- Licensee made a TS interpretation to allow disregarding a valid TS requirement.
- Insufficient knowledge of regulatory requirements.

05.0 Safety Significance

05.1 RHR Reservoir

The consequence of this event was minimal because of the conditions of the plant during the event. The plant was in the seventh day of an refueling outage with little decay heat, no activities in progress that could result in draining the vessel, no demand for emergency diesels, and little heat load on the emergency cooling systems. However, the safety significance of this event was moderate to high due to the number and specific systems effected.

05.2 Failure to Meet TS Requirements for Control Rods

NRR Technical Specification Branch determined that the safety significance of this event was low because the cells with withdrawn control rods were defueled. This event would not have violated improved technical specification if improved technical specifications were applicable to Fermi. However, this event signifies a significant weakness in using technical clarifications to resolve conflict between technical specifications without either amending or requesting waiver of the requirements with a NOED.

O6.0 Corrective Actions

The following corrective actions were either observed by the inspectors or verified through documentation reviews.

O6.1 RHR Reservoir

The licensee implemented some short term corrective actions. The affected valve (F601A) was repaired. All four cross-tie valves' spline bushing set screws were recessed and lock-tighten.

O6.2 Failure to Meet TS Requirements for Control Rods

The licensee withdrew the technical specification clarification (TSC 96003) on December 20, 1996. The licensee reviewed other current TSCs for similar problems and found none. Currently, the licensee has not issued a LER or DER documenting this issue.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Mode Change Resulting in Missed TS Surveillance

a. Inspection Scope (93702)

The inspectors reviewed various logs and documents associated with the November 4, 1996, event when the plant re-entered Operational Mode 5, from Mode 4 without performing TS required surveillance. The inspectors also interviewed both maintenance and operations personnel. The inspectors also interviewed the appropriate maintenance supervisor.

b. Observations and Findings

On November 4, 1996, the plant re-entered Operational Mode 5, from Mode 4, when a reactor vessel head flange bolt was inadvertently detensioned. Upon identification that not all reactor vessel head flange bolts were tensioned, the licensee recognized that they were in Operational Mode 5 and reviewed surveillance requirements. Based on this review, the licensee determined that Technical Specification (TS) 4.0.4 requirements were not met, in that not all surveillances were completed prior to entry into Operation Condition 5. In this case, the surveillance requirements for TS 3.3.6, "Control Rod Block Instrumentation," for Operational Condition 5 were not completed. Because this surveillance had expired before re-entry into Mode 5, there were less than the minimum required operable channels of intermediate range monitors per trip function.

c. Conclusions

The inspectors determined that on November 5, 1996, the plant re-entered operational Mode 5 without performing TS required surveillance testing of the Control Rod Block Instrumentation.

Technical Specification 4.0.4 requires, in part, that entry into an Operations Condition shall not be made unless the surveillance requirements associated with the Limiting Condition for Operations have been performed. On November 5, 1996, entry was made into Operation Condition 5, without the surveillance requirements for Technical Specification 3.3.6, "Control Rod Block Instrumentation," being performed. This is an apparent violation of TS 4.0.4.

M3.0 Sequence of Events

M3.1 Mode Change Resulting in Missed TS Surveillance

Initial Conditions: Operational Mode 5

6:02 pm	November 4	Head tensioning operations initiated. All 68 head studs installed and hand tightened.
7:27 pm	November 4	First pass tensioning (5400 psig) complete.
9:04 pm	November 4	Second pass tensioning (7200 psig) complete. Operations was informed of completion of second pass. Mode change from Operational Mode 5 to 4 was made. Surveillance for Technical Specification 3.3.6, "Control Rod Block Instrumentation," would have been due soon if the plant remained in Mode 5. With the plant in Mode 4, the surveillance was no longer required.
9:56 pm	November 4	Adjustment pass IAW Procedure 35.710.08 initiated.
1:50 am	November 5	The Adjustment Pass for final set of four studs completed. Later, Maintenance personnel find that stud nut #27 was inadvertently loosen enough to move by hand. Stud #27 was re-tensioned to 7200 psig.
2:15 am	November 5	The Nuclear Shift Supervisor (NSS) was notified that maintenance personnel found stud # 27 loose.
2:35 am	November 5	Refuel Coordinator went to control to fully brief NSS on situation. NSS recognized that when stud #27 was inadvertently loosen that the plant re-entered Mode 5, and TS 4.0.4

requirements not met because of an expired technical specification required surveillance.

All other studs were subsequently checked, no other problems identified.

M4.0 Root Cause and Major Contributors

M4.1 Mode Change Resulting in Missed TS Surveillance

- Poor communications between maintenance personnel and Refuel Floor Coordinator with operations.
- Insufficient knowledge of technical specifications.
- Inadequate control of work activities on refueling floor.
- Inadequate procedure in that all RPV bolting activities were not completed prior to declaring a change to Mode 4.

M5.0 Safety Significance

M5.1 Mode Change Resulting in Missed TS Surveillance

The safety consequences and significance of this event was minimal. However, the significance of the root cause, failure to recognize the impact of plant conditions on technical specification requirements was high and of importance.

M6.0 Corrective Actions

M6.1 Mode Change Resulting in Missed TS Surveillance

The licensee will revise the administrative procedure MOP13, "Refueling Operations," to define some actions for changing from Mode 5 to 4. Procedure 35.710.008, "Reactor Vessel Head Detensioning and Tensioning," will also be changed to provide thumbrules for adjustments to stud tension. A caution or note will also be provided that will require stopping and getting the refueling floor coordinator verification if more than a turn of adjustment is required. Checks of stud elongation data will be made between the reactor cavity and the official record before adjustments will be made to ensure the correct adjustments were made. Finally, the mode change will be made after all trim passes were completed and stud elongation is within tolerances for all studs. However, these changes were not developed before the end of the inspection and were not planned to be completed until the end of May, 1997.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 17, 1996. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Delong, Superintendent, System Engineering
T. Dong, NSSS, Technical Engineering
P. Fessler, Plant Manager, Operations
J. Plona, Technical Director
P. Smith, Director, Nuclear Licensing
W. O'Connor, Manager, Nuclear Assessment
N. Peterson, Supervisor Compliance
A. Antrassian, Licensing Engineer
J. Moyers, Director Nuclear Quality Assurance
R. Newkirk, Supervisor, Licensing
R. Eberhardt, Director, Nuclear Training

LIST OF ACRONYMS USED

CCHVAC	Control Center Heating Ventilation Air Conditioning
CFR	Code of Federal Regulations
DECo	Detroit Edison Company
DER	Deviation Event Report
EECW	Emergency Equipment Cooling Water
HVAC	Heating Ventilation and Air Conditioning
LER	Licensee Event Report
MOV	Motor Operated Valves
NRC	Nuclear Regulatory Commission
NSS	Nuclear Shift Supervisor
OSRO	Onsite Review Organization
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SOE	Sequence of Events
SOP	System Operating Procedure
TS	Technical Specification
TSC	Technical Specification Clarification
UHS	Ultimate Heat Sink