June 14, 2000

MEMORANDUM TO: Donald C. Cook Nuclear Plant Manual Chapter 0350 Panel

FROM: John A. Grobe, Director, DRS /RA/

SUBJECT: MINUTES OF INTERNAL MEETING OF THE DONALD C. COOK NUCLEAR PLANT MANUAL CHAPTER 0350 PANEL

The Donald C. Cook Nuclear Plant Manual Chapter 0350 Panel charter was announced on April 17, 1998, and most recently revised on March 3, 2000. One of the action items of this charter was to conduct internal meetings approximately twice per month. Subsequent experience has indicated that these meetings need to be held on a more frequent basis. These internal meetings are used to discuss significant technical and performance issues, NRC regulatory approach, and inspection resources and priorities. Attached for your information are the minutes from the internal meeting of the Inspection Manual Chapter 0350 Restart Panel held on June 7 and June 8, 2000.

Docket Nos. 50-315; 50-316

Enclosures: As stated

cc w/att:

M. Satorius, NRR J. Zwolinski, NRR S. Singh Bajwa, NRR C. Craig, NRR J. Stang, NRR J. Thompson, NRR J. Grobe, RIII G. Shear, RIII A. Vegel, RIII M. Holmberg, RIII B. Bartlett, RIII D. Passehl, RIII K. Coyne, RIII J. Maynen, RIII Docket Files

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MEETING MINUTES:	Internal MC 0350 Restart Panel Meeting
	on the D. C. Cook Nuclear Plant

DATE: June 7 and June 8, 2000

TIME:2:00 p.m. Central (June 7, 2000)8:30 a.m. Central (June 8, 2000)

ATTENDEES:

S. BajwaD. PassehlB. BartlettR. Quirk (June 7 only)S. BlackW. Reckley (June 7 only)M. Case (June 7 only)G. ShearR. Gardner (June 7 only)J. StangJ. GrobeA. VegelM. HolmbergJ. Zwolinski (June 7 only)C. LyonStang

Discussion Topics:

1. Plant Status and Inspector Insights

The plant is in Mode 4. The licensee is preparing to perform a walkdown of the reactor coolant system while pressure in the reactor coolant system is 1000 psi. The licensee completed calibration of reactor coolant system resistance temperature detectors. During the June 8, 2000, meeting, the plant experienced a partial loss of offsite power. Mr. Bartlett and the resident staff initiated review of this event.

J. Maynen

- 2. Other
 - Messrs. Quirk and Gardner discussed the status of a concern regarding the safeguards test cabinet and the engineered safety features actuation system. Messrs. Quirk and Bartlett took action to brief licensee management on the concern.
 - NRR took the lead to provide a point by point response to a memorandum from the Regional Administrator to Mr. Grobe regarding an operable but degraded containment concrete wall.
 - The Inspection Manual Chapter 0350 Meeting Minutes from May 24, 2000, discussed closure of Case Specific Checklist Item 7, "Resolution of Nonsafety-Related Cables Going to Shunt Trip Coils." The minutes stated that there was an outstanding item regarding whether to pursue a backfit analysis based on risk. The Panel determined during the May 24, 2000, meeting that the level of risk did not warrant a backfit. Enclosed with this set of meeting minutes is NRR's analysis. (See Enclosure 1)
- 3. Discuss Closure of Restart Action Matrix (RAM) Items

The Panel reviewed and approved the revised documentation for Item R.3.8, "Control Room Habitability."

The Panel approved the following RAM items for closure:

- Item R.3.12, "Tornado Missile Related issue on Unit 2: Missile issue for the Heating, Ventilation and Air Conditioning (HVAC) intake hoods located on the roof of the Electrical Switchgear Room and Spent Fuel Building"
- Item R.3.13,"HELB USQ Licensing Basis Change Request for 10D on Plume and SRP, MEB 3-1 exclusion areas"

(Note: The NRC Office of Nuclear Regulatory Research (RES) performed additional reviews. RES evaluated potential accident sequence precursors during their review of the licensee event reports and condition reports for D.C. Cook Units 1 and 2. For those issues identified as potential precursors, modifications and compensatory measures have been made by the licensee to address the concerns. RES identified no restart constraints.)

- Item R.3.14, "Methodology Changes to Steam Generator Tube Rupture (SGTR) Analysis: Original 30-minute operator action time to isolate the affected Steam Generator to prevent overfill was not supported by analysis"
- Item R.3.15, "Loss of AC and Feedwater Analyses Revision: Input changes on positive Moderator Temperature Coefficient (MTC) used to meet acceptance criteria, resulting in a reduction in safety margin for Unit 2"
- Item R.3.16, "Auxiliary Building Engineered Safety Feature Ventilation System (AES or ESF) Filtration System Bypass Damper Redundancy: The previous charcoal filter bypass dampers were installed in series; because of excess leakage rates they were replaced, however, the replacement dampers were installed in parallel and are subject to single failure issues"
- Item R.3.17, "Changes in Input Assumptions and the UFSAR for Transient Mass Distribution (TMD) Analysis: Reconstitution of Sub-Compartment Blowdown Analysis and Assumptions Resulted in Differential Pressures Higher than in the UFSAR"

Enclosure 2 provides details on the Inspection Manual Chapter 0350 Panel's assessment of the above items.

4. Discuss Emergent Safety Issues for Commission.

The Inspection Manual Chapter 0350 Restart Panel discussed the items below for possible emergent safety issues.

- 10 CFR 50.72 Reports
- Licensee Event Reports
- Inspection Findings
- Allegations
- Third Party Issues (e.g., Union of Concerned Scientists)
- Pending Investigations

- Pending Escalated Enforcement New Licensing Issues •
- •

The Panel identified no new issues.

5. Discuss Status of Meeting Minutes

> Mr. Passehl reported no timeliness concerns with issuance of outstanding meeting minutes.

Discussion of Licensing Plan. 6.

Mr. Stang reported no new licensing actions.

7. Discuss/Update Milestones and Commitments.

The Panel discussed important upcoming meetings and deadlines.

8. Other.

The latest Restart Action Matrix is included as Enclosure 3.

May 24, 2000

- MEMORANDUM TO: John A. Grobe, Director Division of Reactor Safety Region III
- FROM: Mark F. Reinhart, Acting Chief **/RA/** Probabilistic Safety assessment Branch Division of Systems Safety and Analysis Office of Nuclear Regulatory Regulation
- Subject: D.C. COOK RISK IMPLICATIONS ASSOCIATED WITH THE D.C. COOK USE OF THE NON-SAFETY RELATED CONTROL CABLES IN THE EMERGENCY DIESEL GENERATOR LOAD SHEDDING CIRCUITRY THAT ARE ROUTED IN COMMON TRAYS WITHOUT PHYSICAL SEPARATION TO PERFORM SAFETY-RELATED FUNCTION (TIA 99-031)

Per your request, the Operations Support Team of the Probabilistic Safety Assessment Branch (SPSB) in NRR provides its evaluation of the risk implications associated the use of nonsafety-related control cables in the emergency diesel generator (EDG) load shedding circuitry that are routed in common trays without physical separation to perform the safetyrelated function at D.C. Cook. Our evaluation is attached.

Based on our expedited evaluation of the issue, we find that the risk impact of this condition is insignificant.

Should you have any questions, contact Ian Jung at 301-415-1837.

Attachment: As stated

Risk Implications: Use of nonsafety-related control cables in the EDG load shedding circuitry that are routed in common trays without physical separation to perform the safety-related function.

Load shedding of nonsafety-related loads during loss of offsite power (LOOP) is a component for determining overall emergency diesel generator (EDG) system reliability. The impact on EDG reliability due to the as-found condition is difficult to measure; however, review of this issue and industry experience have shown that it is most likely insignificant. Examination of the Accident Sequence Precursor (ASP) reports (NUREG/CR-4674, Vol. 14 - Vol. 26¹) since 1990 indicated that there were no ASP events of similar nature for all nuclear power plants. Search of the Licensee Evaluation Reports (LERs) for all sites since 1985 identified only one similar issue (Accession No. 9208050265), but the issue was concluded to be of negligible risk significance due to the similar reasons on which the conclusion of this evaluation is based. Plant-specific operating experience also indicates that D.C. Cook did not identify any actual failures/events associated with these control cables. It is believed that a cable fault in these low-energy control cables is rare and, in addition, the cable interaction that causes multiple cable failures in the cable tray appears unlikely based on the design characteristic, i.e., protective devices, and experience. The licensee's testing results also indicate that the postulated fire scenario in these low energy cables, rendering the load shedding capability for both trains inoperable, is relatively unlikely.

In addition, relevant core damage scenarios and their frequencies were examined to gain risk insights. For design basis accidents such as a loss of coolant accident (LOCA)-induced LOOP, the overloading condition is more likely without proper load shedding since the emergency core cooling system (ECCS) pumps would be actuated. However, their initiating event frequency is typically very small (below 1E-5/yr: NUREG/CR-6538² and NUREG/CR-5750³). For a small LOCA-induced LOOP, the time available for operator recovery would be more substantial and the recovery probability of offsite power is generally high. For events such as LOOP, transientinduced LOOP, and LOOP-induced LOCA, it is either; (a) less likely to have an EDG overloading condition even without load shedding due to no ECCS actuation, or (b) the initiating event frequency is generally low. Furthermore, the potential for operator recovery, i.e., manual load shedding and EDG re-start, would also be possible in some scenarios. External events such as fire, flooding, earthquake, and missile were considered. The scenarios of concern are associated with an external event that results in a common cause cable failure with a concurrent LOOP. These scenarios are believed to be very unlikely due to the low initiating event frequency. These are in addition to the fact that the impact on the EDG reliability would likely be insignificant. More detailed information from the licensee would be required to credit these aspects; however, these insights generally strengthen the insignificant risk implications of the as-found condition.

In summary, the staff believes that the impact on the EDG reliability is insignificant, and it is further supported by probabilistic risk insights. Therefore, the staff concludes that the risk implications of the as-found condition are insignificance.

¹NUREG/CR-4674, Vol. 14 - 26, "Precursors to Potential Core Damage Accidents," 1991 - 1998

²NUREG/CR-6538, "Evaluation of LOCA with Delayed LOOP and LOOP with Delayed LOCA Accident Scenarios," July 1997

³NUREG/CR-5750, "Rates of events at U.S. Nuclear Power Plants: 1987 -1995," February 1999

- MEMORANDUM TO: John A. Grobe, Director Division of Reactor Safety Region III
- FROM: Suzanne C. Black, Deputy Director Division of Licensing Project Management Office of Nuclear Reactor Regulation
- SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT 2 CLOSEOUT OF RESTART ACTION MATRIX ISSUES DEALING WITH GENERIC LETTER 91-18 OPERABILITY EVALUATIONS

The Office of Nuclear Reactor Regulation (NRR) staff has reviewed your verbal request for technical assistance pertaining to auditing Indiana Michigan Power Company's (the licensee's) operability evaluations pursuant to Generic Letter 91-18. These issues are being tracked in the Restart Action Matrix (RAM) as R.3.8, R.3.12, R.3.13, R.3.14, R.3.15, R.3.16, and R.3.17.

- **RAM ISSUE R.3.8**: Post-LOCA Control Room Dose, Noncompliance with GDC 19 Acceptance Criteria (see Attachment 1).
- **RAM ISSUE R.3.12**: Tornado Missile Related issue on Unit 2: Missile issue for the HVAC intake hoods located on the roof of the Electrical Switchgear Room and Spent Fuel Building (see Attachment 2). Unit 2 is currently in Mode 4. The licensee intends to address Mode 5 and 6 compensatory measures under the same severe weather procedures as Modes 1-4.
- **RAM ISSUE R.3.13**: HELB Licensing Basis Change Request for 10D on Plume and SRP, MEB 3-1 exclusion areas (see Attachment 3).
- **RAM ISSUE R.3.14**: Methodology Changes to SGTR Analysis: Original 30 minute operator action time to isolate the affected Steam Generator to prevent overfill was not supported by analysis (see Attachment 4).
- **RAM ISSUE R.3.15**: Loss of AC and Feedwater Analyses Revision: Input changes on positive MTC used to meet acceptance criteria, resulting in a reduction in safety margin for Unit 2 (see Attachment 5).

CONTACT: J. Stang, NRR (301) 415-1345

- **RAM ISSUE R.3.16**: Auxiliary Building Engineered Safety Feature Ventilation System Filtration System Bypass Damper Redundancy: The previous charcoal filter bypass dampers were installed in series; because of excess leakage rates they were replaced, however, the replacement dampers were installed in parallel and are subject to single failure issues (see Attachment 6).
- **RAM ISSUE R.3.17**: Changes in Input Assumptions and the UFSAR for Transient Mass Distribution (TMD) Analysis: Reconstitution of Sub-Compartment Blowdown Analysis and Assumptions Resulted in Differential Pressures Higher than in the UFSAR (see Attachment 7).

As discussed in the attachments, the NRR staff finds that the licensee's modifications, compensatory measures, and calculations provide reasonable assurance that the degraded or nonconforming conditions will not prevent the systems in question from performing their intended functions. Therefore, NRR recommends to the MC 0350 Restart Panel closure of the above RAM issues based on the attached documentation.

This concludes our efforts under TAC Nos. MA8958, MA9020, MA8968, MA8969, MA9022, MA9023, and MA8977.

Docket No. 50-316

- Attachments: 1. RAM ISSUE R.3.8 2. RAM ISSUE R.3.12 3. RAM ISSUE R.3.13 4. RAM ISSUE R.3.14 5. RAM ISSUE R.3.15 6. RAM ISSUE R.3.16
 - 7. RAM ISSUE R.3.17

RAM ISSUE R.3.8: CONTROL ROOM HABITABILITY

BACKGROUND: By letter dated October 28, 1998, the NRC documented the status of the current review of the D.C. Cook control room habitability evaluation. The letter documented an August 5, 1998, phone conversation where the licensee stated that the current control room ventilation dose calculations being evaluated by the NRC were determined to require technical and administrative upgrades. However, the licensee stated that the changes in the analysis did not affect the ability of the control room ventilation system to meet the requirements of GDC 19 or raise questions regarding the operability of these systems.

Following issuance of the letter, deficiencies in the Control Room Ventilation System (CRVS) were identified during the ESRR discovery process. The issues included single-failure problems related to control room isolation and pressurization and other deficiencies with control room dose assumptions, such as unfiltered in-leakage and atmospheric dispersion factors. In addition, a tracer gas test was conducted on the Unit 1 and Unit 2 control rooms, which resulted in higher than previously measured unfiltered in-leakage.

LICENSEE'S CORRECTIVE ACTIONS: As a result of the discovery of the nonconforming condition of the control room, the licensee followed the guidance contained in GL 91-18, Revision 1, and developed compensatory actions for the nonconforming condition. The licensee performed post-accident Control Room dose analysis, with the currently licensed TID-14844 source term, and determined that interim compliance with GDC 19 is achieved by operating with a more restrictive Reactor Coolant System (RCS) activity limit than the current Technical Specification (TS) limit of 1.0 micro-curies/gram dose equivalent I-131. The licensee is also using administrative controls to lower the allowable limits for total containment leakage and lower the allowable limits for total ECCS leakage. The licensee will also use KI for the operators as an additional compensatory measure. The licensee has performed a safety screening of the compensatory measures and concluded that the compensatory measures do not introduce a USQ.

For long-term resolution of the issue, the licensee has decided not to restore the plant to the original licensing basis as described the UFSAR. The licensee has elected to revise the control room analysis with new analysis assumptions, methodology, and acceptance criteria for the 10 C.F.R. § 50.67 Alternative Source Term. This submittal will also contain new Technical Specifications for recent plant upgrades and the implementation of Generic Letter 99-02 requirements. The licensee has performed a safety screening of the final resolution of the issue and determined that it constitutes a USQ and a license amendment will have to be submitted and approved by the NRC prior to making the changes to the UFSAR. The licensee is scheduled to submit the license amendment prior to the restart of Unit 2.

NRC REVIEW: The NRR technical staff provided an overview of the licensee's GL 91-18 evaluation of the nonconforming condition. The staff is aware of the following compensatory measures:

- 1. Maintain RCS activity less than 0.35 micro-curies/gm dose equivalent I-131;
- 2. Maintain total containment leak rate less than 0.125 weight percent/day; and
- 3. Maintain total ECCS leak rate less than 0.2 gpm.

The staff considers that the implementation of such compensatory measures is a reasonable approach to limit the post-accident control room dose to within the limits specified by GDC 19 for Unit 2. The staff also notes that the licensee considers the availability of KI for control room operators a defense-in-depth measure in the event radiological conditions within the control room exceed the guidelines of the licensee's established procedures. The performance of the NRR overview will be mentioned in NRC Inspection Report (IR)200016.

RECOMMENDATIONS/ACTIONS: It is recommended to the MC 0350 Panel that RAM ISSUE R.3.8 be closed. No further inspection on this issue is necessary, based on the corrective actions taken by the licensee. In addition, the NRR staff finds that the timeliness of the licensee's corrective actions (prior to restart of Unit 2) for final resolution of the issue is commensurate with the safety significance of the issue.

RAM ISSUE R.3.12: Tornado Missile - Related Issue on Unit 2

The issue deals with tornado missile vulnerabilities associated with the heating, ventilation, and air conditioning (HVAC) intake hoods located on the roof of the electrical switchgear room (I&M Condition Report P-99-13576), and tornado missile vulnerabilities associated with the fuel handling building (I&M Condition Report P-99-27193).

Consistent with the guidance contained in Generic Letter 91-18, equipment listed in the Technical Specifications is considered to be operable if it is able to perform its specified functions as defined in the current licensing basis for the facility. Therefore, in order to be operable, Technical Specification equipment that includes this as a design requirement must be protected from tornado missiles whenever a valid tornado threat exists (i.e., during tornado season). The staff's position with regard to the operability evaluations that were completed by the licensee is as follows:

- The NRR staff agrees with the licensee's operability evaluation relative to the HVAC intake hoods for Modes 1-4. The staff also agrees that compensatory measures can be taken to restore equipment operability consistent with the guidance contained in GL 91-18. The staff has reviewed the licensee's compensatory measures and find them reasonable, but recommends the resident inspector staff inspect the adequacy of the compensatory measures since they are in a better position to make an assessment.
- The licensee's evaluation did not assess whether the affected equipment that is required to be operable in Modes 5 and 6 can perform their specified functions in the event of a tornado missile strike. This would be applicable to the affected Technical Specification equipment that includes tornado missile protection as a design requirement. Although the licensee's evaluation is weak in its lack of addressing any Mode 5 and 6 vulnerabilities, the staff considers this issue to be of very low safety significance.
- The staff agrees with the licensee's operability evaluation relative to the fuel handling building. While the Technical Specification requirement associated with spent fuel pool water level could be impacted by a tornado missile, the licensee has determined that there is reasonable assurance that the spent fuel pool will continue to perform its intended safety function and therefore, should be considered operable but degraded. This is consistent with the guidance that is contained in GL 91-18, and this approach is acceptable.

RAM ISSUE R.3.13: High Energy Line Break

The staff has completed its assessment of the licensee's operability evaluation regarding High Energy Line Break (HELB) exclusion zones in the Chemical and Volume Control System (CVCS) letdown piping and Steam Generator Blowdown (SGBD) piping. The piping of concern is located outside the containment structure, between the containment penetration and the outboard isolation valve, and near the normal blowdown flash tanks.

In accordance with the Current Licensing Basis (CLB) for D. C. Cook, Units 1 and 2, for high energy lines, breaks must be postulated at terminal ends, and at locations where the break stress threshold is exceeded. Likewise, a single critical crack must be postulated at the most adverse location near safety-related equipment, which can be anywhere along the line. For the above listed systems, the licensee determined that they were in a degraded and nonconforming condition with the CLB. In lieu of bringing these systems into conformance with the CLB, the licensee elected to establish their operability by evaluating postulated break and crack exclusion zones in the affected piping. The licensee requested to amend the licensing basis requirements using the same operability criteria as discussed below.

To justify operability in the degraded condition, the licensee performed analyses to determine the stresses at break postulation locations. The pipe stresses were calculated based on ANSI B31.1.0, 1967, subject to stress-based break postulation threshold criteria stated in Appendix B of Standard Review Plan (SRP) Branch Technical Position (BTP) ASB 3-1 (letters of December 1972 and January 1973, from A. Giambusso, NRC, to licensees). The results of these calculations indicate that the pipe stresses at the terminal ends and other locations are below the threshold break postulation criterion; therefore, there is a low likelihood of breaks occurring in the affected piping.

To avoid postulating a single critical crack at the most adverse location near safety-related equipment, as required under the CLB, the licensee proposed the postulation of cracks based on one half of the break stress criterion. Although this is outside the CLB, the staff finds it acceptable to show operability. To mitigate the effects of potential jet impingement effects on adjacent safety-related equipment, the licensee proposed an exclusion criterion based on the results of NUREG/CR-2913 (no jet impingement effects for equipment located at a distance greater than 10 pipe diameters). This criterion has been accepted by the staff at other plants. The licensee stated that no safety-related equipment was located closer than 10 pipe diameters from the affected piping. The staff finds this acceptable.

To eliminate the postulation of a crack in a portion of the SGBD system located in the normal flash tank room, the licensee replaced a segment of existing piping with heavy wall piping and introduced piping support modifications. This lowered the pipe stresses below the crack stress threshold. The staff finds this acceptable for demonstrating the operability of this piping.

The staff has reviewed the results of the licensee's calculations, and concludes that, although the piping is nonconforming with the CLB, the licensee's operability evaluation is acceptable and provides reasonable assurance for operation in Mode 1.

RAM ISSUE R.3.14: Methodology Changes to SGTR Analysis

The staff has completed its assessment of the licensee's operability evaluation concerning the methodology used in its steam generator tube rupture (SGTR) analysis. The current SGTR analysis assumes that break flow through the ruptured steam generator tube will be stopped in 30 minutes following the event. This assumption was not supported by a thermal hydraulic analysis considering proper operator actions for accident mitigation.

To address the above described non-conservativeness in its SGTR analysis, the licensee has modified its Emergency Operating Procedures (EOPs) and used a staff-approved methodology (WCAP - 10698-P-A) to analyze a design basis SGTR event which incorporated the operator actions specified by plant EOPs at D.C. Cook. The operator action times considered in this analysis has been verified at plant simulator by different operating crews. However, a limiting single failure is not assumed in this new analysis. The licensee considers that this approach is consistent with its current licensing basis. The results of the licensee's new analysis confirms that there will be no steam generator overfill following a SGTR event, break flow will be stopped in 51 minutes, and the radiological consequence will be bounded by the current analysis.

The staff concludes that the licensee's operability evaluation for this issue is acceptable since the results of its new analysis provide reasonable assurance that it is unlikely that a SGTR event could cause steam generator overfill at D.C. Cook.

RAM ISSUE R.3.15: Loss of AC and Feedwater Analyses Revision Due to Input changes to positive MTC used to meet acceptance criteria

The staff has reviewed the licensee's approach to reanalyzing the loss of normal feedwater (LONF) and loss of AC power (LOAC) transients based on the Westinghouse Nuclear Safety Advisory Letter, NSAL-98-007. This letter notified the licensee that incorporation of the pressurizer heater (which was not previously modeled) and a corrected pressurizer spray model resulted in increased pressurizer in-surge for these transients for D.C. Cook Unit 2 when the most positive moderator temperature coefficient (MTC) allowed by plant Technical Specifications (TS) was used. The current D.C. Cook TS limit the MTC to +0.5 x 10⁻⁴ $\Delta k/k/^{\circ}F$ for power levels up to 70 percent, and ramp linearly to 0 x 10⁻⁴ $\Delta k/k/^{\circ}F$ at 100 percent power. In order to achieve acceptable results for Unit 2, Westinghouse used the full power TS limit of 0 x 10⁻⁴ $\Delta k/k/^{\circ}F$ instead of the part power limit of +0.5 x 10⁻⁴ $\Delta k/k/^{\circ}F$ used previously in these analyses. The results confirmed that all acceptance criteria for these events continue to be met and, in particular, the pressurizer does not become water solid.

Although the revised MTC assumption is in compliance with the D.C. Cook Unit 2 TS at full power, the reduction in MTC for the full power transients represents a change in a design input value used in the current UFSAR analyses and represents a reduction in margin of safety, thereby constituting an unresolved safety question (USQ). However, the staff concludes that since this revised analysis complies with the TS limits for MTC under the assumed worst case initiating conditions for these transients, Unit 2 is considered operable but nonconforming until such time that a license amendment incorporating the revised methodology and revised UFSAR pages is reviewed and approved.

RAM ISSUE R.3.16: Auxiliary Building Engineered Safety Feature Ventilation System Filtration System Bypass Damper Redundancy

The staff reviewed the licensee's operability determination regarding the replacement of two ESF ventilation system charcoal filter bypass dampers in series with two bypass dampers in parallel. The bypass dampers are normally open and the charcoal filters are bypassed to maximize the time between charcoal replacements. On receipt of a Phase B Containment Isolation signal, the charcoal filter bypass dampers close and airflow is directed through the charcoal filters. Charcoal filter mode of operation is required in order to remove radioactive gases from the auxiliary building exhaust that may be present under accident conditions.

The licensee's original design required two dampers in series around each charcoal filter. A single failure of one bypass damper to close in a series configuration would not preclude the other bypass damper from closing and redirecting all of the air flow to the charcoal filters. Due to excessive leakage past the original dampers, the licensee replaced them during modification 12-DCP-049, Rev. 1, with improved dampers; however, the improved dampers were installed in a parallel configuration. In the parallel configuration, the failure of one damper to close would allow a bypass flow path around the charcoal filters and release air to the environment without benefit of charcoal filtration.

The licensee determined that an unreviewed safety question existed since the single failure protection of the bypass damper series configuration was lost. The licensee concluded that either a license amendment or additional modification was necessary to resolve the single failure issue, but that the system was operable, but degraded, in the interim. The operability determination was documented in Condition Report P-00-004984.

The licensee's operability determination was supported by the following:

- The operability of the ESF ventilation system as modified has been successfully established by periodic surveillance test procedures;
- The operability of the bypass dampers is verified on a staggered test basis every 31 days;
- The replacement dampers are of superior design, quality, and reliability to the original dampers;
- There have been no known failures of this type of damper in the industry;
- The failure of a bypass damper represents only a partial loss of filtration, since the roughing filters and high efficiency particulate filters are always in the flow path; and
- While a postulated bypass damper failure increases the release of radioactive fission products, the consequences are bounded by the licensee's accident analysis and are within the current licensing basis limits.

The staff reviewed the licensee's operability determination documented in Condition Report P-00-04984 and concluded that it is reasonable until final resolution of the single failure issue, based upon continued successful periodic surveillance testing, the improved design of the replacement dampers, and meeting the current licensing basis accident consequences in the case of a postulated failure of one of the bypass dampers.

RAM ISSUE R.3.17: Transient Mass Distribution Analysis

BACKGROUND

The Mechanical & Civil Engineering Branch (EMEB) has reviewed the submittals by American Electric Power Company (licensee) regarding its operability determination evaluation (ODE) of the D.C. Cook Unit 2 containment and Ice Condenser structures, containment divider barrier seal assembly, and Fan-Accumulator walls in containment (Refs. 2 and 4). EMEB was requested to review the licensee's ODE to determine if the licensee's approach to the structural issues is reasonable and if its conclusion is acceptable for restart of D.C. Cook Unit 2 until final resolution of these issues is determined. EMEB staff also participated in a meeting with the licensee on June 1, 2000, to discuss the results of its operability determination of affected structures. The Plant Systems Branch was consulted concerning the acceptability of the assumptions used in the calculations of differential pressures provided by Westinghouse Electric Company to the licensee (Ref. 3) for its use in the operability evaluation of designated structures.

Containment and Ice Condenser Structures (CR: P-99-06123)

EMEB has reviewed the operability determination evaluation for Unit 2 containment and Ice Condenser structures identified in Section 2 of CR: P-99-06123, to determine if the licensee's technical approach is reasonable and if its conclusion is acceptable. The licensee provided a summary of its ODE of the affected structures.

In its operability evaluation, the licensee examined applicable UFSAR load combinations and determined that the combinations containing design basis accident (DBA) pressure loadings are governing. The licensee used as-built plant specific information in its reconstituted new calculations for Transient Mass Distribution (TMD) analysis (Ref. 3). The licensee has demonstrated that for operability evaluation of Unit 2 containment structures a load factor of 1.0 on the pressure loading was exceeded. The staff considers this evaluation reasonable and a load factor of 1.0 an acceptable threshold for operability due to the inherent conservatism in the TMD analysis. The licensee stated that the other concurrent loads (e.g., seismic) are consistent with UFSAR commitments. The licensee also stated that for concrete and steel structures evaluated in CR 99-06123, stresses are within the code-allowable stresses for the abnormal/extreme environment loading combination with a load factor of greater than 1.0 for each of the loads considered in the load combination.

The licensee has used concrete strength of 5300 psi based on extrapolated data from Unit 1 for the steam generator (SG) enclosure structure. The staff currently accepts as-built strength of 4867 psi based on 28-days concrete cylinder strength data at Unit 2. The licensee has not provided an adequate justification for as-built concrete strength greater than 4867 psi for Unit 2 containment structures. However, the current margin in the SG enclosure structure is sufficient based on as-built concrete strength of 4867 psi.

Containment Divider Barrier Seal Assembly (CR: P-00-02184)

In CR: P-00-02184, the licensee provided a summary of its ODE of Unit 2 containment divider barrier seal assembly. The divider barrier seal assembly provides for separation of the lower compartment of containment from the upper compartment at all locations adjacent to the containment wall. The licensing basis design of the divider barrier seal assembly is qualified for an upward differential pressure of 24 psig, and 1.3 inch of differential movement due to pressure and seismic loading. During the reconstitution of calculations to substantiate the divider barrier seal assembly design, the licensee determined that, portions of the divider barrier seal assembly do not meet the licensing basis design requirements of 24 psig differential pressure and 1.3 inch of lateral movement. The licensee recalculated expected differential pressure of 15.8 psi and maximum lateral movement of 0.96 inch (between the containment and crane wall) for the qualification of divider barrier seal assembly and determined the divider barrier seal assembly to be operable.

The licensee also determined that the existing floor seal assembly was not designed or is capable of resisting a recalculated expected downward differential pressure between the ice condenser lower plenum and the fan accumulator room. However, the licensee stated that the differential pressure exists for a short duration of 200 milliseconds, and any leakage in the downward direction would not constitute a bypass of the ice condenser (Ref. 3).

Fan-Accumulator Walls in Containment (CR: P-00-2506)

9. Limiting Load Combination

In Reference 1, the licensee designates C = 1.5 P1 + DL + T as the limiting load-factored design combination, where C is the capacity; P1 is the pressure due MSLB; DL is the dead load; and T is the thermal loading associated with MSLB. The staff agrees with the licensee's hypothesis that the stresses, strains, and deformations from this loading combination will be larger than those from the other load combinations in the UFSAR. The licensee's operability criterion is C > 1.0 P1, as the effects of DL and T are very small. The operability criterion is controlling compared to LOCA pressures, or the effects of the postulated design-basis earthquake. The licensee does not meet the MSLB design-basis load combination. However, for operability determination, the staff considers the licensee's selection of the operability criterion reasonable and acceptable when taken in context with the inherent conservatism in the TMD analysis.

10. Conditions of Degraded Walls

In the original construction, the top of the walls at azimuths 126° and 307° contained weak grout credited for up to 1000 psi strength. The licensee used sound grout to fill the pockets and excavations created to verify the existence of rebars and to take concrete core samples for verifying the strength of the 126° wall. The licensee asserts that the actual strength of this grout is more than 7000 psi but in the operability calculation it is conservatively assumed as 2500 psi. For the 307° wall, the licensee considered the strength of the weak grout as 1000 psi

in the ODE calculations (Ref. 1). For the purpose of the operability calculations, the licensee considered: (1) The top of all walls to be transferring shear, but not any moment, and (2) the number of rebars considered in the shear resistance was limited only to those verified by visual examination for the 126° wall. The staff considers these actions by the licensee to account for the degraded condition of the walls reasonable and conservative.

11. Concrete Strength

The design concrete strength of 3500 psi is specified for the walls (Ref. 1). The 28-days strengths of concrete cylinders taken during the construction computed for 95/05 confidence are 4385 psi and 4867 psi for Unit 1 and Unit 2 respectively. These are the strength statistics based on lab-cured cylinders. The licensee also has four 28-days and 90-days compressive strength data taken from the Unit 1 containment. The average of these four tests at 28 days is 4856 psi, and at 90 days the average is 5920 psi. Based on these four tests, the licensee is establishing the strength gain due to aging of concrete as 1.22. The licensee proposed to use such relation for Unit 2 containment. The staff did not find this acceptable.

The mere fact that there is an 11 percent difference in the 28-days strengths of Units 1 and 2 indicates that the concrete in the two containments is markedly different; either in the mix proportion, use of admixtures, curing condition, or combination of these factors. This fact would suggest that the statistics of one unit cannot be applied to the other unit. Even for Unit 1, to base the strength gain ratio on the average of four tests does not appear reasonable. Also, relatively early strength gain at 28 days for Unit 2 concrete suggests that the later strength gain may not be as large as that for Unit 1.

In order to establish the 90-days concrete strength at Unit 2, the licensee increased the concrete strength at 28 days from 4867 psi to 5300 psi (i.e., 9 percent increase due to aging). Such a strength gain is not unusual for normal concrete. However, the licensee did not offer substantive basis in support of the proposed increase. Therefore, the staff does not consider the use of 5300 psi concrete reasonable at this time. The staff based its decision on operability of affected walls using 4867 psi concrete as discussed in E below.

12. Treatment of Impulsive Pressure Load

The licensee has used the new TMD analysis (Ref. 3), based on the as-built condition, to develop the time history of the differential pressure resulting from an MSLB, which was applied to the walls as an impulsive load. The licensee developed a generic dynamic load factor (DLF) relationship corresponding to the natural period of vibration (T) of a structure, based on the applied time-history. For all four walls, the licensee has calculated a DLF of 1.09 corresponding to the T of approximately 0.05 seconds. The licensee has also considered the dynamic increase factor (DIF) in strength of materials that could occur as a result of the rapid strain rates associated with a dynamic load, using Appendix C of ACI 349. The staff finds the use of DLF to be consistent with current industry practice. However, considering the almost static response of

the structure to the applied differential pressure load, the use of DIF, in this case, was not adequately justified by the licensee and therefore was not accepted by the staff.

13. Staff's Review of the Calculations

Based on the validity of the licensee's calculations, the staff recalculated the impact of the acceptable parameters in Items C and D above, for the weakest wall at azimuth 126.° The staff found that the impact of the use of 5300 psi vs. 4867 psi in the operability calculations for the 126° wall is not significant. Eliminating the DIF does not appreciably change the load factor calculated for moment, but the load factor associated with the shear transfer calculations changes to 1.05 from the licensee calculated value of 1.21. However, increasing the grout compressive strength from 2500 psi to 3500 psi (which is reasonable for a grout showing the strength of above 7000 psi), would increase the load factor to 1.18. Thus, overall, the staff finds the licensee's operability calculations reasonable and acceptable.

CONCLUSION

The staff has reasonable assurance that the stresses in concrete and steel structures evaluated in CR: P- 99-06123, CR: P-00-02184, and CR: P-00-02506, are within the code-allowable stresses for the abnormal/extreme environment loading combination with load factor greater than 1.0 for each of the loads considered. Based on its review of the information submitted by the licensee and the response to the staff's request for additional information, the staff concludes that the licensee's technical basis for determining operability of Unit 2 containment and Ice Condenser structures, containment divider barrier seal assembly, and Fan-Accumulator walls in containment is reasonable. This conclusion is acceptable for restart of Unit 2 of D.C. Cook.

REFERENCES

- 1. AEP's submittal: Calculation No. SD-000510-003, May 29, 2000.
- 2. D.C. Cook Condition Report: P-00-02506, May 31, 2000.
- 3. Letters, Westinghouse Electric Company to AEP, AEP-00-139, dated April 27, 2000, AEP-99-261, dated August 17, 1999, and AEP-00-178, dated June 1, 2000
- 4. CR: P- 99-06123, and CR: P- 00-02184.

D.C. Cook Restart Action Matrix

June 8, 2000

Item No.		Description	NRC Lead	Priority	Licensee Status	Comments	Status
		Case Specific	Checklist Ite	ems			
Notes:	CA DC ICI IUI EC EF ST/ PR MO NR RR SI - SR (IR RFI TBI The iten	PT - Corrective Action Program Team Inspection (IR TI - Design Control Team Inspection (IR 99023) - Ice Condenser Inspection (IR 99026) - Instrument Uncertainty Inspection (IR 99032) ATI - Engineering Corrective Action Team Inspection TI - Engineering Followup Team Inspection (IR 2000) EOP - Surveillance Testing and Emergency Operatin I - Programmatic Readiness Inspection (IR 99034) V - Motor Operated Valve Inspection (IR 200002) R - NRC Office of Nuclear Reactor Regulation ATI - Restart Readiness Assessment Team Inspection Surveillance Inspection (IR 2000001) I - Senior Resident Inspector (IR 2000001: 02/26/00- 2000016: 05/28/00-07/01/00) - Licensee is ready for this item to be inspected D - To be determined	99024) n (IR 99029) 007) ng Procedure on (IR 200000 04/01/00) (IR	Program 3) 2000013 mated da	Inspection (: 04/02/00-0 ite when the	IR 99033) 5/27/00) licensee will be rea	udy for this
1		Programmatic Breakdown in Surveillance Testing					
1A		Inadequate Instructions in Surveillance Tests	SI (Passehl)	High	05/13/00	IR 98004 IR 98005 IR 98007 IR 98009 IR 97017 IR 99033	Closed IR 2000001
1B		Acceptance Criterion Lack Sufficient Margin to Analysis Limit	SI (Passehl)	High	05/13/00	IR 98005 IR 99033	Closed IR 2000001
1C		Failure to Meet Technical Specification Requirements	SI (Passehl)	High	05/13/00	IR 98005 IR 98007 IR 99033 LER 315/98015-01	Closed IR 2000001
1D		Preconditioning of Equipment Prior to Surveillance Testing	SI (Passehl)	High	05/13/00	IR 98007 IR 99033	Closed IR 2000001
1E		Failure to Assess and Control the Quality of Contractors Performing Surveillance Testing	SI (Passehl)	High	05/13/00	IR 98005 IR 99033	Closed IR 2000001

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
2	Corrective Action Program Breakdown					
2A	Failure to Promptly Identify and Evaluate Conditions Adverse to Quality	CAPT	High			Closed IR 99024
2B	Inadequate Corrective Actions for Previously Identified Conditions Adverse to Quality	ECATI	High		IR 98004 IR 98005 IR98009 IR 97017 LERs 315/98010 315/98017	Closed IR 99029
3	Programmatic Breakdown in the Maintenance of the	e Design Basi	S			
3A	Inadequate Design Control Pertaining to Uncontrolled and/or Unintended Changes in the Plant Design	EFTI	High		IR 98004 IR 98005 IR 98007 IR 98009 IR 97017	Closed IR 2000007
3В	Failure to Update the Final Safety Analysis Report	ECATI	High		IR 98005	Closed IR 99029
3C	Failure to Consider Instrument Uncertainties, Setpoints and/or Instrument Bias	IUI	High		IR 98009	Closed IR 99032
3D	Inadequate Consideration for System/Component Failure Modes	ECATI	High		IR 98009	Closed IR 99029
4	Safety Evaluations					
4A	Failure to Perform Safety Evaluations or Safety Evaluation Screenings	DCTI	High			Closed IR 99023
4B	Inadequate Safety Evaluations	DCTI	High			Closed IR 99023
5	Operator Training Issues					
5A	Training Staff Ability to Develop Technically Accurate Examination Material in Accordance with Examination Guidelines Was Considered Poor		High		IR 97305	Closed IR 98023
5B	Operator Ability to Determine the Correct Protective Action Recommendations for the Emergency Event in Question		High		IR 97305	Closed IR 98023
5C	High Failure Rate for the Operator Examinations Indicated That the Applicants Were Not Well Prepared		High		IR 97305	Closed IR 98023

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
5D	Applicant Abilities to Communicate and Diagnose Events During the Dynamic Simulator Scenarios Was Considered Weak		High		IR 97305	Closed IR 99016
6	Resolution of Ice Condenser Issues	ICI	High		IR 98005 LERs 98004, 5,6,7,8,10,15, 17,24,25,26,32, 35	Closed IR 99026
7	Resolution of Nonsafety-Related Cables Going to Shunt Trip Coils	NRR/ Shear Falevits	High		LER 98016 See Item R.2.7.5 IR 99032 IR 2000013	Closed 0350 Mtg. 05/24/00
8	Resolution of Hydrogen Recombiner Operability Issues	ECATI	High		IR 98007 LER 98009, 98019	Closed IR 99029
9	Resolution of Distributed Ignition Technical Specification Issue	ECATI	High		IR 98007	Closed IR 99029
10	Resolution of Containment Spray System Operability Issues	ECATI	High		LER 98022	Closed IR 99029
11	Resolution of Hydrogen Mitigation System Operability and Material Condition Issues	Holmberg RRATI	High	04/20/00	IR 98007 IR 2000007 IR 2000003 LER 98001	Closed 0350 Mtg. 05/19/00
12	Containment Liner Pitting	ICI	High		LER 98011	Closed IR 99026
13	Systems and Containment Readiness Assessments	SRI	High	05/06/00	Licensee's Restart Plan IR 2000016	Closed 0350 Mtg. 06/05/00
13A	Systems and Containment Problem Discovery		High		Licensee's Restart Plan	Closed IR 99002 IR 99003 IR 99006 IR 99007

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
13B	Systems and Containment Final Readiness Review	RRATI	High	03/20/00	Licensee's Restart Plan	Closed 0350 Mtg. 06/05/00
14	Programmatic Readiness Assessment	RRATI	High	04/23/00	Licensee's Restart Plan	Closed 0350 Mtg. 05/19/00
14A	Programmatic Problem Discovery		High		Licensee's Restart Plan	Closed IR 99013
14B	Contractor Control Program Ready for Restart	PRI	High		Licensee's Restart Plan	Closed IR 99034
14C	Preventative Maintenance Program Ready for Restart	PRI	High		Licensee's Restart Plan	Closed IR 99034
14D	Emergency Operating Procedures Program Ready for Restart	ST/EOP	High		Licensee's Restart Plan IR 99033	Closed IR 2000010
14E	Electrical Protection Coordination including Fuse/Breaker Control Program Ready for Restart	EFTI	High		Licensee's Restart Plan	Closed IR 2000007
14F	Operability Determination Program Ready for Restart	PRI	High		Licensee's Restart Plan	Closed IR 99034
14G	Programmatic Final Readiness Reviews	RRATI	High	04/23/00	Licensee's Restart Plan	Closed 0350 Mtg. 05/19/00
15	Functional Area Readiness Assessment	RRATI	High	04/21/00	Licensee's Restart Plan	Closed 0350 Mtg. 05/19/00
15A	Functional Area Problem Discovery		High		Licensee's Restart Plan	Closed IR 99013
15B	Functional Area Final Readiness Reviews	RRATI	High	04/21/00	Licensee's Restart Plan	Closed 0350 Mtg. 05/19/00
16	Resolution of Operability of Motor Operated Valves in the GL 89-10 Program	MOV	High	04/10/00 (U2)	CR 98-2246, 3555 & 3920 IR 2000002	Closed 0350 Mtg. 05/01/00
	Resta	rt Issues				
R.1	Issues That Involve an Operability Question Regard	ling a System	Required	d for Restart.		
R.1.1	URI 50-315/96013-06, "Normal Charging Capability"	ECATI	Low		SOPI Issue.	Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.1.2	LER 50-316/97003-03, "Performance of Dual Train Component Cooling Water Outage During Unit 2 1996 Refueling Outage Resulted in Condition Outside Plant Design Basis"	ECATI	Low		AE team issue (EEI 50- 315/316/9800 9-29).	Closed IR 99029
R.1.3	LER 50-316/97005-01, "Condition Outside Design Basis Results in Technical Specification Required Shutdown"	ECATI	High		See also LER 315/97017-01	Closed IR 99029
R.1.4	LER 50-315/97017-01, "Condition Outside Design Basis Results in Technical Specification Required Shutdown"	ECATI	High		See also LER 316/97005-01	Closed IR 99029
R.1.5	LER 50-315/97018-01, "Failure to Maintain the 1/4 Inch Particulate Retention Requirement for the Containment Recirculation Sump Results in a Condition Outside the Design Basis"	ECATI	High		AE team issue (EEI 50- 315/316/9800 9-08). CAL Item 2	Closed IR 99029
R.1.6	LER 50-315/97019-01, "Operation Contrary to the Design Bases with Residual Heat Removal Suction Valves Automatic Closure Interlock Defeated in Modes 4 and 5"	ECATI	Low		AE team issue (EEI 50- 315/316/9800 9-34). CAL Item 6 The licensee plans to submit an amendment to Technical Specifications to close the issue.	Closed IR 99029
R.1.7	LER 50-315/97020-01, "Failure to Maintain Sump Vent Configuration Results in Condition Outside the Design Basis"	ECATI	High		AE team issue (EEI 50- 315/316/9800 9-31). CAL Item 2.	Closed IR 99029
R.1.8	LER 50-315/97021-01, "Potential Loss of All Medium and High Head Injection Due to Single Failure Could Result in a Condition That Would Prevent the Fulfillment of the Safety Function of a System"	ECATI	High		AE team issue (URI 50- 315/316/9800 9-07). CAL Item 4.	Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.1.9	LER 50-315/97022-01, "Failure to Comply with USAS B31.1 Power Piping Code Due to Oversight in Valve Control Requirements Results in a Condition That Could Have Prevented Fulfillment of a Safety Function of a System"	ECATI	Low		AE team issue (URI 50- 315/316/9800 9-24).	Closed IR 99029
R.1.10	URI 50-315/97025-03, "SSPS Relay Operability History"	EFTI	Low		See also LER 315/98002-01.	Closed IR 2000007
R.1.11	LER 50-315/97026-01, "Potential for Over pressurization of the Control Air Headers Determined to Be Unanalyzed Condition"	ECATI	Low		AE team issue (URI 50- 315/316/9800 9-13).	Closed IR 99029
R.1.12	LER 50-316/98004-02, "Ice Condenser Bypass Potentially in Excess of Design Basis Limit"	ICI	Low			Closed IR 99026
R.1.13	EEI 50-315/316/98004-10, "Failure to Consider the Effects of Change to ES-0.1 on the Shutdown Margin"	ST/EOP	Low			Closed IR 99033
R.1.14	LER 50-316/98005-00, "Interim LER - Potential for High Energy Line Break to Degrade Component Cooling Water System"	EFTI	High		IR 99029	Closed IR 2000007
R.1.15	URI 50-315/316/98005-31, "As-Found Operability of Ice Condenser in Question for Past Plant Operation"	ICI	Low		See also LERs 315/98004-02, 315/98005-03, 315/98006-02, 315/98007-01, 315/98008-02, 315/98015-00, 315/98015-00, 315/98025-00, 315/98026-00, 315/98032-00, 315/98035-01.	Closed IR 99026
R.1.16	URI 50-316/98007-13, "Pending the Licensee's Assessment of the As Found Operability of the Open Electrical Junction Box, and Additional Inspector Review"	ECATI	Low			Closed IR 99029
R.1.17	URI 50-315/316/98009-13, "Apparent Failure to Analyze All Potential Failure Modes of the Instrument Air System That Could Render Redundant Trains of Safety-Related Equipment Inoperable"	ECATI	Low		See also LERs 315/97023-01, 315/97026-01. CAL Item 5	Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.1.18	EEI 50-315/316/98009-34, "Operation of the Plant without Overpressure Protection for the RHR System, Contrary to the UFSAR"	ECATI	Low		Technical Specification amendment submitted.	Closed IR 99029
					See also LER 315/97019-01.	
R.1.19	LER 50-315/98031-01, "Potential Common Mode Failure of Residual Heat Removal Pumps Due to Use of Inaccurate Values"	ECATI	Low			Closed IR 99029
R.1.20	LER 50-315/98032-00, "Defective and Missing Ice Condenser Basket Welds Represents Unanalyzed Condition, and 10 CFR Part 21 Report"	ICI	Low			Closed IR 99026
R.1.21	LER 50-315/98037-01, "Ice Condenser Bypass Leakage Exceeds Design Basis Limit of 5 Square Feet"	ICI	Low			Closed IR 99026
R.1.22	LER 50-315/98046-00, "Auxiliary Feedwater System Unable to Meet Design Flow Requirements During Special Test"	ECATI	Low			Closed IR 99029
R.1.23	LER 50-315/98050-00, "Ancillary Equipment Installed in Ice Condenser Not Designed to Withstand Design Basis Accident/Earthquake"	ICI	Low			Closed IR 99026
R.1.24	LER 50-315/98058-00, "Postulated High Energy Line Break Could Result in Condition Outside Design Basis for Auxiliary Feedwater"	EFTI	High			Closed IR 2000007
R.1.25	LER 50-315/99001-00, "General Electric HFA Relays Installed in Emergency Diesel Generators May Not Meet Seismic Qualification"	ECATI	Low			Closed IR 99029
R.1.26	LER 50-315/99008-00, "Residual Heat Removal (RHR) Piping Vibrations Could Potentially Cause RHR Piping Failures"	ECATI	Low			Closed IR 99029
R.1.27	LER 50-315/99010-00, "Reactor Coolant System Leak Detection System Sensitivity Not in Accordance with Design Requirements"	ECATI	Low			Closed IR 99029
R.1.28	LER 50-315/99011-01, "Air System for Emergency Diesel Generators (EDG) May Not Support Long Term Operability Due to Original Design Error "	Holmberg RRATI	High		IR 99029 IR 2000007 IR 2000003	Closed 0350 Mtg. 05/19/00
R.1.29	LER 50-315/99012-00, "Auxiliary Building ESF Ventilation System may not be Capable of Maintaining ESF Room Temperatures Post- Accident "	ECATI	Low			Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.1.30	LER 50-315/99013-00, "Safety Injection and Centrifugal Charging Throttle Valve Cavitation During LOCA Could Lead to ECCS Pump Failure"	ECATI	Low			Closed IR 99029
R.1.31	LER 50-316/99003-00, "Fuses Not Installed for Cable Passing Through Containment Penetration"	SRI	Low	03/29/00	IR 2000013	Closed 0350 Mtg. 05/01/00
R.1.32	LER 50-315/99022-01, "Electrical Bus Degraded Voltage Setpoints Too Low For Safety-Related Loads"	NRR	Low	03/31/00	Discuss at 03/24/00 Tech Mtg IR 2000007 IR 2000016	Closed 0350 Mtg. 05/30/00
R.1.33	LER 50-315/99023-00, "Inadequate Technical Specification Surveillance Testing of Essential Service Water Pump Engineered Safety Feature Response Time"	ST/EOP	Low			Closed IR 99033
R.1.34	LER 50-315/99024-00, "Literal Technical Specifications Requirement Not Met By Accumulator Valve Surveillance"	ST/EOP	Low			Closed IR 99033
R.1.35	LER 50-315/99026-00, "High Energy Line Break Programmatic Inadequacies Result in Unanalyzed Conditions"	EFTI	High		Results of the licensee's evaluations and analysis of the safety significance of the conditions described will be provided in a supplement to this LER.	Closed IR 2000007
R.1.36	URI 50-315/316/99021-02, "Review ESW system licensing basis and operational requirements"	SRI	Low		IR 2000013	Closed 0350 Mtg. 05/24/00
R.1.37	LER 50-315/2000-002-00, "Large Bore Piping Not Meeting the Code of Record Results in Safety Systems Being Seriously Degraded"	SRI	Low		IR 2000013	Closed 0350 Mtg. 05/24/00
R.1.38	Licensee biennial review of operations' procedures	SRI	Low		IR 2000016	Closed 0350 Mtg. 06/02/00
R.2	Issues That Pertain to an Existing Case Specific Ch	ecklist Item.	• 			
R.2.1	Issues That Pertain to Case Specific Checklist Item	1, Programm	atic Brea	kdown in Su	rveillance Testing	

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.1.1	EEI 50-315/316/97017-03, "A Procedure That Defines How to Perform Containment Inspections and Makes No Reference to Looking for Fibrous Material or Insulation That Could Clog the Recirculation Sump Is Not Appropriate to the Circumstances"	ECATI	High		Escalated enforcement item A.1.c. CAL Item 7.	Closed IR 99029
R.2.1.2	LER 50-315/98001-02, "Containment Air Recirculation System Flow Testing Results Indicate Condition Outside the Design Basis"	ECATI	Low		See also EEI 50- 315/316/9800 7-06.	Closed IR 99029
R.2.1.3	LER 50-315/98004-02, "Interim LER - Restricted Ice Condenser Flow Passages Found to Constitute an Unanalyzed Condition"	ICI	Low			Closed IR 99026
R.2.1.4	IFI 50-315/316/98004-03, "Verification of Sump Screen As-Left Configuration"	ECATI	Low			Closed IR 99029
R.2.1.5	LER 50-315/98006-02, "Interim LER - Ice Basket Weighing Option Results in Potential Unanalyzed Condition"	ICI	Low			Closed IR 99026
R.2.1.6	LER 50-315/98007-01, "Interim LER - Ice Condenser Weights Used to Determine Technical Specification Compliance Not Representative"	ICI	Low		See IR 98005	Closed IR 99026
R.2.1.7	EEI 50-316/98007-07, "An Apparent Violation for Failure to Comply with TS Requirements Upon Discovery of an Inoperable PORV"	ST/EOP	Low		See also LER 316/98002-00.	Closed IR 99033
R.2.1.8	URI 50-315/98007-16, "Review of Additional Information on the Appropriateness of the Use of Duct Tape Inside of Containment"	ST/EOP (N.Shah)	Low		CAL Item 7 IR 99033	Closed IR 2000001
R.2.1.9	URI 50-315/316/98009-09, "ECCS Pump Suction Valves Not Leak-Rate Tested to Confirm Accident Analysis Assumption"	ECATI	High		CAL Item 8.	Closed IR 99029
R.2.1.10	URI 50-315/316/98009-15, "Apparent Failure to Establish Controls to Prevent Potential Operation of the CCW System with the CCW Heat Exchangers Above the Maximum Fouling Factor Value Established by the GL 89-13 Testing Program"	ECATI	Low			Closed IR 99029
R.2.1.11	URI 50-315/316/98009-16, "Performance Testing of the EDG Heat Exchangers Was Not Able to Detect Degradation, As Required by the Licensee's GL 89-13 Testing Program"	SRI	Low		IR 99021 Long Term Corrective Actions to be Addressed After Restart IFI 99021-03	Closed

ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.1.12	LER 50-315/98015-01, "Ice Weight Requirements Potentially Not Met Due to Nonconservative Assumption in Software Program"	ICI	Low			Closed IR 99026
R.2.1.13	EEI 50-315/98021-03, "Surveillance Procedure Did Not Direct the Operators to Restore the AES System to a Configuration Included in the Normal Operating Procedure or Enter the Appropriate TS Limiting Condition for Operation Action Statement"					Closed IR 99010
R.2.1.14	LER 50-315/98036-00, "Flow Indicator Not Calibrated at Technical Specification Required Frequency"	ST/EOP	Low			Closed IR 99033
R.2.1.15	LER 50-315/98041-00, "Component Cooling Water Pump Surveillance Testing Has Potential to Cause Unplanned Entry into TS 3.0.3"	ST/EOP	Low			Closed IR 99033
R.2.1.16	LER 50-315/98043-00, "Containment Air Locks Testing Not Performed in Accordance with TS 4.6.1.3.a"	ST/EOP	Low			Closed IR 99033
R.2.1.17	LER 50-315/98044-00, "Offsite Power Availability Not Verified as Required by Technical Specification Surveillance"	ST/EOP	Low			Closed IR 99033
R.2.1.18	LER 50-315/98051-00, "Reactor Trip Signal from Manual Safety Injection Not Verified as Required by Technical Specification Surveillance"	ST/EOP (N.Shah)	Low		IR 99033 Licensee Updating CRs	Closed IR 2000001
R.2.1.19	LER 50-315/98053-00, "Interim LER - Use of Inoperable Substitute Subcooling Margin Monitor"	SI (Passehl)	Low	03/31/00	IR 99033 IR 2000013	Closed 0350 Mtg. 05/01/00
R.2.1.20	LER 50-315/98060-00, "Interim LER - Reactor Trip System Response Time Testing Does Not Comply with Technical Specification Requirement"	ST/EOP (J. Maynen)	Low		IR 99033 Licensee Updating CRs	Closed IR 2000001
R.2.1.21	LER 50-315/99003-00, "Control Room Pressurization System Surveillance Test Does Not Test System in Normal Operating Condition"	ST/EOP (N.Shah)	Low		IR 99033	Closed IR 2000001
R.2.1.22	LER 50-316/99002-00, "Requirements of Technical Specification 4.0.5 Not Met Due to Improperly Performed Test"	ST/EOP (N.Shah)	Low		IR 99033	Closed IR 2000001
R.2.1.23	LER 50-315/99032-00, "Failures to Comply with Technical Specification 4.0.5 Identified by Inservice Testing Program Assessment"	MOV/ SI	High	03/31/00	IR 2000002	Closed 0350 Mtg. 05/01/00
R.2.1.24	LER 50-315/99014-00, "Requirements of Technical Specification 4.0.5 Not Met for Boron Injection Tank Bolting"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.1.25	LER 50-315/99015-00, "Radiation Monitoring System Not Tested in Accordance with Technical Specification Surveillance Requirements"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)
R.2.1.26	LER 50-315/99016-00, "Technical Specification Requirements for Source Range Neutron Flux Monitors Not Met"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)
R.2.1.27	LER 50-315/99021-00, "Generic Letter 96-01 Test Requirements Not Met in Surveillance Tests"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)
R.2.2	Issues That Pertain to Case Specific Checklist Item	2, Corrective	Action P	rogram Brea	kdown	
R.2.2.1	IFI 50-315/316/96006-07, "Responses to NRC Generic Communications Was Narrowly Focused and Did Not Fully Address the Issues"	ECATI	Low		IPAP issue.	Closed IR 99029
R.2.2.2	IFI 50-315/316/96006-14, "Slowed Implementation of Procedural Improvements"	SRI	Low		IPAP issue.	Closed IR 99022
R.2.2.3	LER 50-315/97010-02, "Unit Operation with Lake Temperature in Excess of Design Basis Value Results in Condition Outside the Design Basis"	ECATI	Low		AE team issue (EEI 50- 315/316/9800 9-28).	Closed IR 99029
					See also R.3.9.	
R.2.2.4	URI 50-315/316/97017-05, "The As-Found Condition of the Containment Recirculation Sump Relative to Technical Specification Operability During Modes 1, 2, and 3"	ECATI	High		See also LER 315/97024-04.	Closed IR 99029
R.2.2.5	EEI 50-315/316/98004-16, "Failure to Implement Corrective Actions for a Previous Condition Adverse to Quality"	ECATI	Low			Closed IR 99029
R.2.2.6	EEI 50-315/316/98005-12, "Failure to Identify/Evaluate Missing Ice Segments in Lower Section of Ice Baskets"	ICI	Low		Escalated enforcement Item B.2.	Closed IR 99026
R.2.2.7	EEI 50-315/316/98005-13, "Failure to Identify/Evaluate Buckled Webbing in Lower Section of Ice Baskets"	ICI	Low		Escalated enforcement Item B.3.	Closed IR 99026
R.2.2.8	EEI 50-315/316/98005-14, "Failure to Identify/Evaluate Fibrous Material in the Ice Condenser"	ICI	Low			Closed IR 99026
R.2.2.9	EEI 50-315/316/98005-15, "Failure to Promptly Identify/Evaluate Missing Ice Basket Sheet Metal Screws"	ICI	Low		See also LER 315/98005-03. Escalated enforcement Item B.1.	Closed IR 99026

Enclosure 3	Encl	losure	3
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ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.2.10	EEI 50-315/316/98005-16, "Failure to Prevent Recurrence of Loose U-Bolt Nuts"	ICI	Low		Escalated enforcement Item B.4.	Closed IR 99026
R.2.2.11	EEI 50-315/98005-17, "Failure to Prevent Recurrence of Separated Ice Baskets"	ICI	Low		Escalated enforcement Item B.5.	Closed IR 99026
R.2.2.12	EEI 50-315/316/98005-18, "Failure to Take Prompt Effective Corrective Action Ice Baskets with Failed Fillet Welds"	ICI	Low		Escalated enforcement Item B.6.	Closed IR 99026
R.2.2.13	URI 50-315/316/98009-04, "Apparent Failure to Take Prompt Corrective Action After the 1993 Systems Based Instrument and Control Inspection Finding Regarding the Potential for Vortexing and Air Entrainment in the RWST, and After Documented by the Licensee in 1995 in CR 95-1015"	ECATI	High			Closed IR 99029
R.2.2.14	EEI 50-315/316/98009-12, "Apparent Lack of Documentation to Demonstrate That the Control Room Equipment Was Qualified at Worst Case Operating Temperatures in the Control Room"	ECATI	Low		See also LER 315/97014-02.	Closed IR 99029
R.2.2.15	LER 50-315/98010-01, "Ice Condenser Intermediate Deck Door Structural Discrepancies Results from Failure to Follow Procedures"	ICI	Low			Closed IR 99026
R.2.2.16	EEI 50-315/315/98016-01, "Programmatic Breakdown in the Area of Corrective Action"	ECATI	Low			Closed IR 99029
R.2.2.17	LER 50-315/98017-01, "Debris Recovered from Ice Condenser Represents Unanalyzed Condition"	ICI	Low			Closed IR 99026
R.2.3	Issues That Pertain to Case Specific Checklist Item Basis	3, Programm	atic Brea	kdown in the	Maintenance of th	e Design
R.2.3.1	IFI 50-315/316/96006-10, "Technical Operating Guidance Was Promulgated to Shift Supervisors Without Indication That It Had Operations Management Approval for Implementation"	SRI	Low		IPAP issue.	Closed IR 99022
R.2.3.2	LER 50-315/97011-02, "Operation Outside the Design Basis for ECCS and Containment Spray Pumps for Switchover to Recirculation Sump Suction"	Holmberg	High	04/13/00	AE team Issue (50- 315/316/9800 9-01, 02, and 03). CAL Item 1 IR 99029 IR 2000013	Closed 0350 Mtg. 05/01/00

ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.3.3	LER 50-315/97012-01, "Potential Operation of CCW System Above Design Basis Value for Heat Exchanger Outlet Constitutes Condition Outside Design Basis"	ECATI	Low		AE Team Issue (50- 315/316/9800 9-33). CAL Item 3	Closed IR 99029
R.2.3.4	LER 50-315/97014-02, "Potential for Operation in Unanalyzed Condition Due to Postulated Elevated Room Temperatures"	ECATI	Low		AE team Issue (50- 315/316/9800 9-12).	Closed IR 99029
R.2.3.5	EEI 50-315/316/97017-01, "The Lack of Sufficient Measures to Assure That the Design Basis Was Correctly Translated into Specifications to Control the Installation of Material That Could Be Essential to the Safety-Related Functions of the Containment System"	ECATI	High		Escalated enforcement Item C.2.d. IR 99029	Closed IR 2000007
R.2.3.6	EEI 50-315/316/97017-02, "The Lack of Sufficient Measures to Assure That the Design Basis Was Correctly Translated Into Instructions Which Would Be Changed in a Controlled Manner"	ECATI	High		Escalated enforcement Item C.2.e.	Closed IR 99029
R.2.3.7	EEI 50-315/316/97017-04, "A Procedure for Installation, Replacement, and Repair of Silicone Fire Barrier Penetration Seals That Did Not Require That Fibrous Damming Material Be Removed or Encapsulated Following Sealing Operations Is Not Appropriate to the Circumstances"	EFTI	High		Escalated enforcement Item C.2.d. IR 99029	Closed IR 2000007
R.2.3.8	LER 50-315/97024-04, "Material Discovered in Containment Degrades Containment Recirculation Sump and Results in Condition Outside Design Basis"	ECATI	High			Closed IR 99029
R.2.3.9	EEI 315/316/98004-09, "Failure to Verify or Adequately Check the Design Inputs in Calculation DCCHV12AE06-N"	ECATI	Low		Escalated enforcement Item C.2.I.	Closed IR 99029
R.2.3.10	EEI 50-315/316/98005-20, "WCAP-11902 Analysis Not Incorporated into the FSAR Per 50.71e"	ICI	Low		Escalated enforcement Item C.1.a.	Closed IR 99026
R.2.3.11	EEI 50-315/316/98005-21, "As-Built Ice Basket Bottom Assembly Not Incorporated into the FSAR Per 50.71e"	ICI	Low		Escalated enforcement Item C.1.b.	Closed IR 99026
R.2.3.12	EEI 50-315/316/98005-22, "As-Used Ice Form Not Incorporated into the FSAR Description Per 50.71e"	ICI	Low			Closed IR 99026
R.2.3.13	EEI 50-316/98005-23, "Ice Basket Modified by 02-MM-032 Not Incorporated into the FSAR Description Per 50.71e"	ICI	Low		Escalated enforcement Item C.1.c.	Closed IR 99026

Enclosure 3	Encl	losure	3
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ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.3.14	EEI 50-315/98005-24, "Ice Baskets Modified by 01-MM-048 Not Incorporated into the FSAR Description Per 50.71e"	ICI	Low		Escalated enforcement Item C.1.c.	Closed IR 99026
R.2.3.15	EEI 50-315/316/98005-25, "Westinghouse Ice Basket Seismic Load Study, Dated February 28, 1990 Not Incorporated into the FSAR Per 50.71e"	ICI	Low		Escalated enforcement Item C.1.d.	Closed IR 99026
R.2.3.16	EEI 50-315/316/98005-26, "Revised Replacement Ice Basket Design Not Incorporated into the FSAR Per 10 CFR 50.71e"	ICI	Low			Closed IR 99026
R.2.3.17	EEI 50-315/98005-27, "Unauthorized Modification (Bolt Vice Pin) Installed in Three Unit 1 Ice Baskets"	ICI	Low		Escalated enforcement Item C.2.a.	Closed IR 99026
R.2.3.18	EEI 50-316/98005-28, "Unauthorized Modification (Sheath of Sheet Metal) Installed on a Unit 2 Ice Basket"	ICI	Low		Escalated enforcement Item C.2.b.	Closed IR 99026
R.2.3.19	EEI 50-316/98005-29, "Unauthorized Modification (Rivets Vice Screws) Installed on a Unit 2 Ice Basket"	ICI	Low		Escalated enforcement Item C.2.c.	Closed IR 99026
R.2.3.20	EEI 50-315/316/98005-30, "Failure to Follow Design Controls for Ice Basket Cruciform Modifications"	ICI	Low			Closed IR 99026
R.2.3.21	URI 50-316/98007-15, "Upward Travel of the Blocks Would be Limited by Contact with the Loose Nuts"	EFTI	Low			Closed IR 2000007
R.2.3.22	EEI 50-315/316/98009-01, "Apparent Failure to Recognize and Evaluate All RWST Level Measurement Error and Uncertainties"	IUI	High		See also LER 315/97011-02. Escalated enforcement Item C.2.f.	Closed IR 99032
R.2.3.23	URI 50-315/316/98009-02, "Incorrect RWST Level Acceptance Criterion Specified in TS Surveillance Procedure Could Have Allowed RWST Level to be Less than the TS Requirement"	ECATI	Low		See also LER 315/97011-02.	Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.3.24	EEI 50-315/316/98009-03, "Apparent Failure to Consider Potential for Vortexing and Air Entrainment When Establishing the RWST Low- Low Level Setpoint"	Holmberg	High	03/29/00	See also R.2.3.2 and LER 315/97011-02	Closed 0350 Mtg. 05/01/00
					Upon closing this item also close EA#s	
					Escalated enforcement Item C.2.g.	
					IR 99029 IR 2000013	
R.2.3.25	EEI 315/316/98009-05, "The Uncertainty Calculations for the Containment and Containment Sump Level Instrumentation Loops Do Not Account for the Impact on the Post-	EFTI	High		Escalated enforcement Item C.2.h.	Closed IR 2000007
	Accident Containment Water Levels (ECPs 1-2- N3-01, 1-RPC-14, and 2-RPC-14), and Do Not Consider the Potential for Vortexing, Air Entrainment, or NPSH Requirements"				IR 99032	
R.2.3.26	EEI 50-315/316/98009-06, "Apparent Failure to Demonstrate, Using Design Basis Documentation, That There Was Adequate Containment Recirculation Sump Water Volume Following a LOCA"	ECATI	High		Escalated enforcement Item C.2.i.	Closed IR 99029
R.2.3.27	URI 50-315/316/98009-07, "Apparent Failure to Preclude a Single Active Failure When Performing Changes to the Plant, Which Is Contrary to the Assumptions in the UFSAR and the Design Basis"	ECATI	Low		See also LER 315/97021-01.	Closed IR 99029
R.2.3.28	EEI 50-315/316/98009-08, "Apparent Failure to Maintain the 1/4 Inch Containment Recirculation Sump Particulate Retention Requirement, Which Could Allow the ECCS Throttle Valves and	ECATI	High		See also LER 315/97018-01	Closed IR 99029
	Containment Spray Nozzles to Become Inoperable"				Escalated enforcement Item C.2.k.	
R.2.3.29	URI 50-315/316/98009-10, "Apparent Failure to Demonstrate, Using Design Basis Documentation, That the Plant Could Perform a TS 3.0.3 Shutdown in 36 hours to 200°F Using One CCW Train and Design Basis Assumptions"	ECATI	Low		CAL Item 3	Closed IR 99029
R.2.3.30	URI 50-315/316/98009-11, "Apparent Failure to Correctly Translate the As-Built Design of the CCW Heat Exchanger into Safety-Related Calculations and Analyses"	ECATI	Low			Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.3.31	EEI 50-315/316/98009-14, "Operation of the Plant with CCW Supplied Flows to Safety- Related and Important to Safety Components Contrary to the Values Stated in the UFSAR"	ECATI	Low			Closed IR 99029
R.2.3.32	URI 50-315/316/98009-17, "Inadequate Justification to Return the Unit 2 250 VDC Battery Train CD to an Operable Status"	SRI	Low			Closed IR 99021
R.2.3.33	EEI 50-315/316/98009-18, "Apparent Failure to Maintain Adequate Design and Procedural Controls That Allowed the Plant to Operate in Modes 5 and 6 without an Adequate Volume of Borated Water in the Other Unit's RWST in Order to Meet Appendix R Requirements"	ECATI	Low			Closed IR 99029
R.2.3.34	URI 50-315/316/98009-19, "Apparent Failure to Perform Instrument Uncertainty Calculation for the CCW Heat Exchanger Outlet Temperature Loop Uncertainty"	IUI	Low			Closed IR 99032
R.2.3.35	URI 50-315/316/98009-20, "Apparent Failure to Perform Instrument Uncertainty Calculation for the ESW Intake Temperature Loop Uncertainty"	IUI	Low			Closed IR 99032
R.2.3.36	URI 50-315/316/98009-21, "Apparent Failure to Perform Instrument Uncertainty Calculation for the Control Room Temperature Loop Uncertainty"	IUI	Low			Closed IR 99032
R.2.3.37	URI 50-315/316/98009-22, "Apparent Programmatic Deficiency with the Setpoint Control Program Concerning the Ability to Perform and Account for Instrument Uncertainties"	IUI	Low			Closed IR 99032
R.2.3.38	URI 50-315/316/98009-23, "Performing Changes to Safety-Related Procedures without Apparent Proper Review and/or Approval, Contrary to the Provisions of TS 6.5.3.1 and 10 CFR Part 50.59 Requirements"	SRI	Low			Closed IR 2000001
R.2.3.39	URI 50-315/316/98009-24, "Apparent Failure to Maintain Proper Design Control Regarding Industry Standards and Codes"	EFTI	Low		See also LER 315/97022-01.	Closed IR 2000007
R.2.3.40	URI 50-315/316/98009-25, "Apparent Failure to Maintain Adequate Design Control and Follow Established Procedures for Equipment Abandoned in Place"	ECATI	Low			Closed IR 99029
R.2.3.41	URI 50-315/316/98009-26, "Apparent Failure to Maintain Adequate Drawing Control That Has the Potential to Impact Plant Operating Procedures, and Maintenance Activities That Use Drawings"	ECATI	Low			Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.3.42	URI 50-315/316/98009-27, "Apparent Failure to Adequately Translate Design Basis Assumptions into Plant Procedure OHP4021.001.004, Plant Cooldown from Hot Standby to Cold Shutdown"	ECATI	Low			Closed IR 99029
R.2.3.43	EEI 50-315/316/98009-29, "Dual Train CCW Outage During Unit 2 Refueling Outage Results in Condition Outside the Design Basis"	SRI	Low		See also LER 316/97003-03	Closed IR99023
					Escalated enforcement Item D.1.a.	
R.2.3.44	IFI 50-315/316/98009-35, "UFSAR and TS Inconsistencies with RWST Volume"	ECATI	Low			Closed IR 99029
R.2.3.45	IFI 50-315/316/98009-36, "The RWST and the Containment Water Level Instrumentation AOTs Should Appropriately be Governed by Consistent AOT Requirements"	ST/EOP	Low			Closed IR 99033
R.2.3.46	LER 50-315/98011-02, "Steel Containment Liner Pitting in Excess of Design Basis"	ICI	Low			Closed IR 99026
R.2.3.47	LER 50-315/98012-01, "1/4 Inch Particulate Requirement not maintained in Containment Recirculation Sump"	ECATI	High			Closed IR 99029
R.2.3.48	LER 50-315/98013-01, "Improper Splice Configurations for Power Operated Relief Valve Limit Switches Results in Unanalyzed Condition"	EFTI	Low			Closed IR 2000007
R.2.3.49	LER 50-315/98014-03, "Response to High-High Containment Pressure' Procedure Not Consistent with Analysis of Record"	ST/EOP	Low			Closed IR 99033
R.2.3.50	LER 50-315/98018-02, "Use of Reactor Coolant Pump Seals as Alternate Boron Injection Flow Path Potentially Results in Unanalyzed Condition"	ST/EOP	High		IR 99033	Closed IR 2000010
R.2.3.51	LER 50-315/98020-01, "Interim LER - Containment Recirculation Sump pH Upper Limit Potentially Exceeded Due to Analysis Input Omission"	ECATI	Low			Closed IR 99029
R.2.3.52	LER 50-315/98022-02, "Potential Failure of Spray Additive Tank Nitrogen Regulator Results in Unanalyzed Condition"	ECATI	Low			Closed IR 99029
R.2.3.53	LER 50-315/98038-00, "Potential for Single Failure to Isolate Emergency Core Cooling System Suction Paths"	ECATI	Low			Closed IR 99029
R.2.3.54	LER 50-315/98045-01, "Interim LER - Insufficient Deliverable Volume in Containment Spray System Chemical Additive Tank"	ECATI	Low			Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.3.55	LER 50-315/98047-00, "Interim - Potential Increase for Leakage Reactor Coolant Pump Seals Identified"	SI	High	04/08/00	USQ See R.3.7 IR 99033 IR 2000010 IR 2000016 LER will remain open pending review of supplement	Closed 0350 Mtg. 05/30/00
R.2.3.56	LER 50-315/98049-00, "Interim - Emergency Boron Injection Flow Path Inoperable Due to Original Design Deficiency"	ECATI	Low			Closed IR 99029
R.2.3.57	LER 50-315/98052-01, "Potential Failure Mode for Air Operated Components Not Considered in Original Design"	ECATI	Low		CAL Item 5	Closed IR 99029
R.2.3.58	LER 50-315/98055-00, "Interim - Potential Condition Outside Design Basis for Rod Control System"	ECATI	Low			Closed IR 99029
R.2.3.59	LER 50-315/98056-00, "Interim LER - Hot Leg Nozzle Gaps"	ECATI	Low		See also Item R.3.6.	Closed IR 99029
R.2.3.60	LER 50-315/98059-00, "Interim LER - Single Failure in Containment Spray System Could Result in Containment Spray pH Outside Design"	ECATI	Low			Closed IR 99029
R.2.3.61	LER 50-315/99017-00, "Improperly Installed Fuel Oil Return Relief Valve Renders Emergency Diesel Generator Inoperable Due to Personnel Error"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)
R.2.3.62	LER 50-315/99020-00, "Emergency Diesel Generators Declared Inoperable Due to Inadequate Protection of Air Intake, Exhaust and Room Ventilation Structures from Tornado Missile Hazards"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)
R.2.4	Issues That Pertain to Case Specific Checklist Item	4, Safety Eva	aluations			
R.2.4.1	VIO 50-315/96011-01, "Failure to Implement Temporary Modification Procedure"	ECATI	Low			Closed IR 99029
R.2.4.2	VIO 50-315/316/96015-04, "Failure of Design Control Measures to Adequately Review for Suitability Non-Safety Related Piping on the AFW Pumps"	ECATI	Low			Closed IR 99029
R.2.4.3	VIO 50-315/316/97004-04, "Failure to Perform 50.59 Evaluation (Ventilation Catch Basin in CR Panels)"					Closed IR 99001
R.2.4.4	VIO 50-315/316/97009-07, "Procedure on Temporary Modifications Was Not Followed"				OSTI issue.	Closed IR 97009

ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.4.5	IFI 50-315/316/97009-08, "NRR to Determine If Seasonal Modification Is Really a Permanent Change"	ECATI	Low		OSTI issue.	Closed IR 99029
R.2.4.6	VIO 50-315/316/97009-09, "Modification Package Missed Discrepancies"	ECATI	Low		OSTI issue.	Closed IR 99029
R.2.4.7	URI 50-316/97018-03, "Adequacy of Operations Procedure Safety Evaluations"	ECATI	Low			Closed IR 99029
R.2.4.8	VIO 50-315/316/97024-01, "Failure to Maintain Written Safety Evaluation"	ECATI	Low			Closed IR 99029
R.2.4.9	LER 50-315/98002-01, "Degraded Solid State Protection System Master Relays Result in Condition Outside the Design Basis"	EFTI	Low		See also URI 50- 315/316/9702 5-03.	Closed IR 2000007
R.2.4.10	EEI 50-315/316/98004-01, "Failure to Perform a Safety Evaluation for Re-Drilling the Sump Roof Vent Holes"	ECATI	Low			Closed IR99023
R.2.4.11	EEI 50-315/316/98004-02, "Failure to Perform a Safety Evaluation for the Change to Delete the Containment Recirculation Sump Support Nut"	ECATI	Low			Closed IR99023
R.2.4.12	EEI 50-315/316/98004-04, "Failure to Perform a Safety Evaluation Screening for Changing the Containment Recirculation Sump Screen Materials"	ECATI	Low			Closed IR99023
R.2.4.13	EEI 50-315/316/98004-05, "Failure to Perform a Safety Evaluation for the Welding and Reduction in Sump Screen Size"	ECATI	Low			Closed IR99023
R.2.4.14	URI 50-315/316/98004-07, "Historic Operability Review for Past ES-1.3 Revisions"	ST/EOP	Low		CAL Item 4	Closed IR 99033
R.2.4.15	EEI 50-315/316/98004-11, "Failure to Perform an Adequate Safety Evaluation Prior to the CVCS Filter Change"	ECATI	Low			Closed IR99023
R.2.4.16	EEI 50-315/316/98004-12, "Failure to Perform a Safety Evaluation for Procedure Changes Required by Design Change RFC-DC-12-2665"	ECATI	Low			Closed IR 99029
R.2.4.17	EEI 50-315/316/98004-13, "Failure to Perform an Adequate Safety Evaluation for Changes to the Plant Affecting Four Emergency Operating and Abnormal Operating Procedures"	ST/EOP	Low		See also Case Specific Checklist Item 5.	Closed IR 99033
R.2.4.18	EEI 50-315/316/98004-14, "Failure to Perform an Adequate Safety Evaluation to Support Changes to CCW Flows that Could Exceed the UFSAR CCW Heat Exchanger Design Flow Values"	ECATI	Low		Escalated enforcement Item D.1.c.	Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.4.19	EEI 50-315/316/98004-15, "Failure to Perform an Adequate Safety Evaluation for the RWST Low Level Alarm Setpoint Change"	ECATI	Low		Escalated enforcement Item D.1.c.	Closed IR 99029
R.2.4.20	VIO 50-315/316/98007-01, "Failure to Perform a Full Safety Evaluation on the Change to the Operating Procedure for the Hydrogen Recombiners"	ECATI	Low			Closed IR 99029
R.2.4.21	EEI 50-315/316/98007-06, "An Apparent Violation for Failure to Comply with 10 CFR 50.59"	ECATI	Low		See also LER 315/98001-02.	Closed IR 99029
R.2.4.22	URI 50-315/98007-17, "Review Divider Deck Barrier Seal Installation Procedure Which allowed Seal Material Configuration to Vary with Engineering Approval"	ICI	Low			Closed IR 99026
R.2.4.23	EEI 50-315/316/98009-28, "Operation of the Plant Above the Maximum UHS Temperature Limit without Performing a 10 CFR 50.59 Evaluation"	ECATI	Low		See also LER 315/97010-02. See also Item R.3.9. Escalated enforcement Item D.1.a.	Closed IR 99029
R.2.4.24	EEI 50-315/316/98009-30, "Revision to ES-1.3 Created a Single Failure Vulnerability That Could Render One RHR Pump and Both Trains of SI and CCP Inoperable"	ST/EOP	Low		CAL Item 4. Escalated enforcement Item D.1.b.	Closed IR 99033
R.2.4.25	EEI 50-315/316/98009-31, "Refilling the Containment Recirculation Sump Ventilation Holes without Performing a 10 CFR 50.59 Safety Evaluation"	ECATI	Low		See also LER 315/97020-01. Escalated enforcement Item C.2.j.	Closed IR 99029
R.2.4.26	EEI 50-315/316/98009-32, "Change to CCW Operating Procedure Was Not Recognized as a Change to the Intent of the Procedure"	SRI	Low		Escalated enforcement Item D.1.b.	Closed IR 99021
R.2.4.27	EEI 50-315/316/98009-33, "Operation with Less Than UFSAR Specified CCW Flow Through the RCP Thermal Barrier without Performing a 10 CFR 50.59 Safety Evaluation"	ECATI	Low		See also LER 315/97012-01. Escalated enforcement Item D.1.b.	Closed IR 99029
R.2.4.28	EEI 50-315/316/98018-01, "Improperly Closed Request for Change"	ECATI	Low			Closed IR 99029

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status			
R.2.5	Issues That Pertain to Case Specific Checklist Item 5, Operator Training Issues								
R.2.5.1	LER 50-316/91007-02, "Simulator Scenario Identified Flowpath That Diverted ECCS Flow, Caused by Plant Design/Emergency Response Guidelines"	ECATI	Low			Closed IR 99033			
R.2.5.2	IFI 50-315/316/98023-01, "Verify the Quality and Adequacy of the Licensee's EOPs Prior to Plant Restart"	ST/EOP	High		IR 99033	Closed IR 2000010			
R.2.6	Issues That Pertain to Case Specific Checklist Item	6, Resolution	of Ice C	ondenser Iss	sues				
R.2.6.1	EEI 50-315/316/98005-01, "Inadequate Instructions for Inspection of Flow Passages"	ICI	Low		See also Case Specific Checklist Item 1. See also LERs 315/98004-02, 315/98005-03, 315/98006-02, 315/98007-01, 315/98008-02, 315/98015-00, 315/98017-01, 315/98026-00. Escalated enforcement Item A.1.a.	Closed IR 99026			
R.2.6.2	EEI 50-315/316/98005-02, "Inadequate Instructions for Selecting Flow Passages"	ICI	Low		See also Case Specific Checklist Item 1. See also LERs 315/98004-02, 315/98005-03, 315/98006-02, 315/98007-01, 315/98007-01, 315/98017-01, 315/98017-01, 315/98025-00, 315/98026-00. Escalated enforcement Item A.1.a.	Closed IR 99026			

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.6.3	EEI 50-315/316/98005-03, "Insufficient Margin to Analysis Limit for Evaluating a Degraded Ice Condenser"	ICI	Low		See also Case Specific Checklist Item 1. Escalated enforcement Item A.2.a.	Closed IR 99026
R.2.6.4	EEI 50-315/316/98005-04, "Insufficient Margin to Analysis Limit for Maximum Gross Ice Basket Weight"	ICI	Low		See also Case Specific Checklist Item 1. Escalated enforcement Item A.2.b.	Closed IR 99026
R.2.6.5	EEI 50-315/316/98005-05, "Inadequate Instructions for Entry into an Unanalyzed Condition (Unpinning 60 Ice Baskets)"	ICI	Low		See also Case Specific Checklist Item 1. See also LERs 315/98004-02, 315/98006-02, 315/98007-01, 315/98015-00, 315/98017-01, 315/98025-00, 315/98026-00. Escalated enforcement Item A.1.b.	Closed IR 99026
R.2.6.6	EEI 50-315/316/98005-06, "Failure to Follow the Procedure Change Process for a Completed Surveillance Test"	ICI	Low		See also Case Specific Checklist Item 1.	Closed IR 99026

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.6.7	EEI 50-315/316/98005-07, "Failure to Select a Representative Sample of Ice Baskets to Weigh Per TS 4.6.5.1.b2"	ICI	Low		See also Case Specific Checklist Item 1. See also LERs	Closed IR 99026
					315/98004-02, 315/98005-03, 315/98006-02, 315/98007-01, 315/98008-02, 315/98015-00, 315/98017-01, 315/98025-00, 315/98026-00, 315/98032-00, 315/98035-01.	
					Escalated enforcement Item A.5.	
R.2.6.8	EEI 50-315/316/98005-08, "Failure to Assess and Control the Quality of Work by Ice Condenser Contractors"	ICI	Low		See also Case Specific Checklist Item 1. See also LERs 315/98004-02, 315/98005-03, 315/98007-01, 315/98008-02, 315/98017-01, 315/98017-01, 315/98026-00, 315/98032-00.	Closed IR 99026
					Escalated enforcement Item A.3.	

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.6.9	EEI 50-315/316/98005-09, "Failure to Inspect Accessible Areas of the Lower Ice Basket Per TS 4.6.5.1.d"	ICI	Low		See also Case Specific Checklist Item 1.	Closed IR 99026
					See also LERs 315/98004-02, 315/98005-03, 315/98007-01, 315/98008-02, 315/98015-00, 315/98017-01, 315/98026-00, 315/98032-00, 315/98035-01.	
					Escalated enforcement Item A.4.	
R.2.6.10	EEI 50-315/316/98005-10, "Insufficient Margin to TS 4.6.5.3.1.b Limit for Lower Ice Inlet Door Opening Torque"	ICI	Low		See also Case Specific Checklist Item 1.	Closed IR 99026
R.2.6.11	EEI 50-315/316/98005-11, "Insufficient Margin to TS 4.6.5.3.2.b Limit for Intermediate Deck Door Opening Force"	ICI	Low		See also Case Specific Checklist Item 1.	Closed IR 99026
R.2.6.12	LER 50-315/98005-03, "Screws Missing from Ice Condenser Ice Basket Coupling Rings Results in Potential Unanalyzed Condition"	ICI	Low			Closed IR 99026
R.2.6.13	LER 50-315/98024-00, "Allegation Concerning Accuracy of Ice Basket Weights"	ICI	Low		See also Case Specific Checklist Item 1.	Closed IR 99026
R.2.6.14	LER 50-315/99007-00, "Calculations show that the Divider Barrier Between Upper and Lower Containment Volumes May Be Overstressed"	ECATI	Low		See also Case Specific Checklist Item 1.	Closed IR 99029
R.2.7	Issues That Pertain to Case Specific Checklist Item Coils	7, Resolution	of Non-S	Safety Relate	ed Cables Going to	Shunt Trip
R.2.7.1	EEI 50-315/98007-02, "An Apparent Violation for Declaring the Recombiner Operable with Recorded Data Which Exceeded the TS Limits"	EFTI	Low		See also Case Specific Checklist Item 1.	Closed IR 2000007
					See also LER 315/98009-01.	

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.7.2	EEI 50-315/98007-03, "An Apparent Violation for an Inadequate Procedure Which Failed to Measure Resistance to Ground Immediately Following the Heat Up Test"	EFTI	Low		See also Case Specific Checklist Item 1.	Closed IR 2000007
					See also LER 315/98019-02.	
R.2.7.3	EEI 50-316/98007-04, "An Apparent Violation for a Procedure Which Caused Inconsistent Performance of TS Surveillances"	ST/EOP	Low		See also Case Specific Checklist Item 1.	Closed IR 99033
R.2.7.4	EEI 50-315/316/98007-05, "An Apparent Violation for Failure to Correct a Previously Identified Condition Regarding Preconditioning of Equipment Prior to a Surveillance Test"	ST/EOP	Low		See also Case Specific Checklist Items 2 and 3.	Closed IR 99033
R.2.7.5	LER 50-315/98016-02, "Nonsafety-Related Cables Routed to Safety-Related Equipment"	NRR/ Shear Falevits	Low		LER retracted IR 99032 IR 2000007 IR 2000013	Closed 0350 Mtg. 05/24/00
R 2 8	Issues That Pertain to Case Specific Checklist Item	8 Resolution	of Hydro	ngen Recomt	See USU 7	
R.2.8.1	LER 50-315/98009-01, "Hydrogen Recombiner Surveillance Requirement Not Being Met Results in a Condition Prohibited by Technical Specifications"	ECATI	Low		See also EEI 50-315/98007- 02.	Closed IR 99029
R.2.8.2	LER 50-315/98019-02, "Hydrogen Recombiner Temperature Circuit Technical Specification Surveillance Requirement Not Met"	ECATI	Low			Closed IR 99029
R.2.8.3	LER 50-315/98033-00, "Hydrogen Recombiner Wattmeter Circuit Technical Specification Surveillance Requirement Not Met"	ECATI	Low			Closed IR 99029
R.2.9	Issues That Pertain to Case Specific Checklist Item	9, Resolution	of Distrik	outed Ignitior	n Technical Specifi	cation Issue
R.2.9.1	IFI 50-315/98007-08, "Review of the Design Basis for the DIS and How the Raised Lip Supported the Design Basis"				See also Case Specific Checklist Item 3.	Closed IR99001
R.2.9.2	IFI 50-315/98007-09, "Review of the Design Basis for the DIS and How the Spray Impingement May Have Affected the Design Basis"	ECATI	Low		See also Case Specific Checklist Item 3.	Closed IR 99029

ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.2.9.3	IFI 50-315/316/98007-10, "Review of the Design Basis for the DIS and Whether the DIS Is Required to be Environmentally Qualified"				See also Case Specific Checklist Item 3.	Closed IR 99001
R.2.9.4	IFI 50-315/98007-11, "Unable to Identify Any NRC Correspondence That Specifically Approved the Licensee Position"	SRI	Low		See also Case Specific Checklist Item 3.	Closed IR 99021
R.2.9.5	IFI 50-315/98007-12, "DIS Was Declared Inoperable on March 11, 1998, Pending Resolution of the Surveillance Testing Questions"				See also Case Specific Checklist Item 3.	Closed IR99001
R.2.9.6	URI 50-315/316/98007-14, "Review of Whether the DIS Is Required for Design Basis Accidents"					Closed IR99001
R.2.10	Issues That Pertain to Case Specific Checklist Item	10, Resolutio	on of Con	tainment Spr	ay System Operab	ility Issues
R.2.10.1	LER 50-315/98027-00, "Interim LER - Debris of Unknown Origin Found in West Containment Spray Header"	SRI	High			Closed IR 99022
R.2.10.2	LER 50-315/98030-01, "Incorrect Installation of Containment Spray Heat Exchanger Could Result in Unanalyzed Condition"	ECATI	Low			Closed IR 99029
R.2.10.3	LER 50-315/98034-00, "Interim LER - Flow Rates to Containment Spray Headers Are Potentially Lower than Design Basis Values"	ECATI	High			Closed IR 99029
R.2.13	Issues That Pertain to Case Specific Checklist Item	13, Systems	and Cont	tainment Rea	adiness Assessme	nts
R.2.13.1	LER 50-316/99001-00, "Degraded Component Cooling Water Flow to Containment Main Steam Line Penetrations"	SRI	Low			Closed IR 99022
R.2.13.2	LER 50-316/20001-00, "Through -Liner Hole Discovered in Containment Liner"	EFTI	Low		IR 2000013	Closed 0350 Mtg. 05/16/00
R.2.13.3	Operability of degraded Unit 2 CEQ fan room concrete wall (CRs P-00-02506 and P-00-00610). Potential bypass of lower containment during a MSLB if wall fails.	R. Landsman	High			Open
R.2.13.4	LER 50-315/99019-00, "Victoreen Containment High Range Radiation Monitors Not Environmentally Qualified to Withstand Post- LOCA Conditions"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)
R.2.14	Issues That Pertain to Case Specific Checklist Item	14, Program	matic Rea	adiness Asse	essment	
R.2.14.1	LER 50-316/99027-00, "Underrated Fuses Used in 250 Vdc System Could Result in Lack of Protective Coordination"	EFTI	High			Closed IR 2000007

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status			
R.2.16	Issues That Pertain to Case Specific Checklist Item 16, Resolution of Operability of Motor Operated Valves in the GL 89-10 Program								
R.2.16.1	LER 50-315/99031-00, "Valves Required to Operate Post-Accident Could Fail to Open Due to Pressure Locking/Thermal Binding"	MOV	Low	04/10/00	IR 2000002	Closed 0350 Mtg. 05/01/00			
R.2.16.2	LER 50-315/99018-00, "Refueling Water Storage Tank Suction Motor Operated Valve Inoperable Due to Inadequate Design"	SRI	Low		IR 2000013	Closed (Pending IR 2000013)			
R.3	License Issues That Need to Be Addressed to Supp	oort Plant Res	tart.						
R.3.1	Unreviewed Safety Question on Containment Sump Level	NRR	High		Amendments 234 and 217 issued 12/13/99.	Closed. (See Comment)			
					CAL Issue.				
R.3.2	Ice Condenser Sublimation Rate	NRR	Low		Amendments 234 and 217 issued 12/13/99.	Closed. (See Comment)			
					CAL Issue.				
R.3.3	Unreviewed Safety Question on Containment Liner Pitting	NRR	Low		Not a USQ. See IR 99026 E8.2.	Closed IR 99026			
R.3.4	Unreviewed Safety Question on Hydrogen Sub- Compartment Issue.	NRR	Low		Following a design basis accident, areas >4% hydrogen.	Closed 0350 Mtg. 05/30/00			
					Licensee meets requirements of 10 CFR 50.54				
					02/15/00 Public Meeting (See Minutes)				
					IR 2000016				
R.3.5	Containment Sump/Spray pH Issue	NRR	Low	12/31/99	See also USQ on Containment Sump Level.	Closed 0350 Mtg. 05/30/00			
					IR 2000016				

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.3.6	Hot Leg Nozzle Gap Credit for Peak Centerline Temperature	NRR	Low		Amendments 236 and 218 issued 12/23/99.	Closed. (See Comment)
					See also LER 315/98056-00.	
R.3.7	Unreviewed Safety Question on Reactor Coolant Pump Seal Leakoff	NRR	Low	TBD	See also LER 315/98047-00	Closed 0350 Mtg. 05/30/00
					See R.2.3.55	00,00,00
					IR 2000016	
R.3.8	Control Room Habitability	NRR	Low	TBD	See also USQ on Containment Sump Level.	Closed 0350 Mtg. 06/02/00
					IR 2000016	
R.3.9	Lake Water Temperature Affects on ESW System and Control Room Temperatures	NRR	Low	TBD	See LER 315/97010-02 See EEI 50-	Open
					315/316/9800 9-28.	
R.3.10	Adequate NPSH for ECCS Pumps	NRR	High	TBD	TACs MA8265 MA8566	Closed 05/03/00 ltr Stang to Powers
R.3.11	USQ for Auxiliary Feedwater Ventilation	NRR	High	TBD		Closed Amendments 244 (U1) 225(U2) issued 04/25/00
R.3.12	Tornado Missile - Related issue on Unit 2: Missile issue for the Heating, Ventilation and Air Conditioning (HVAC) intake hoods located on the roof of the Electrical Switchgear Room and Spent Fuel Building	NRR			See Minutes to 0350 Mtg held on 06/08/00	Closed 0350 Mtg. 06/08/00
R.3.13	HELB USQ - Licensing Basis Change Request for 10D on Plume and SRP, MEB 3-1 exclusion areas	NRR			See Minutes to 0350 Mtg held on 06/08/00	Closed 0350 Mtg. 06/08/00

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
R.3.14	Methodology Changes to Steam Generator Tube Rupture (SGTR) Analysis: Original 30 minute operator action time to isolate the affected Steam Generator to prevent overfill was not supported by analysis	NRR			See Minutes to 0350 Mtg held on 06/08/00	Closed 0350 Mtg. 06/08/00
R.3.15	Loss of AC and Feedwater Analyses Revision: Input changes on positive Moderator Temperature Coefficient (MTC) used to meet acceptance criteria, resulting in a reduction in safety margin for Unit 2	NRR			See Minutes to 0350 Mtg held on 06/08/00	Closed 0350 Mtg. 06/08/00
R.3.16	Auxiliary Building Engineered Safety Feature Ventilation System (AES or ESF) Filtration System Bypass Damper Redundancy: The previous charcoal filter bypass dampers were installed in series; because of excess leakage rates they were replaced, however, the replacement dampers were installed in parallel and are subject to single failure issues.	NRR			See Minutes to 0350 Mtg held on 06/08/00	Closed 0350 Mtg. 06/08/00
R.3.17	Changes in Input Assumptions and the UFSAR for Transient Mass Distribution (TMD) Analysis: Reconstitution of Sub-Compartment Blowdown Analysis and Assumptions Resulted in Differential Pressures Higher than in the UFSAR	NRR			See Minutes to 0350 Mtg held on 06/08/00	Closed 0350 Mtg. 06/08/00
R.4	Issues That Could Result in Significant Personnel R Excess of Limits.	adiation Expo	osure, Ra	idioactivity R	elease or Effluent [Discharge, in
R.4.1	IFI 50-315/316/96013-08, "Consequences of Single Failure of CCP [Centrifugal Charging Pump] Emergency Leakoff Valves"	ECATI	Low		SOPI Issue.	Closed IR 99029
R.4.2	IFI 50-315/316/98004-08, "Peak Containment Pressure and Long-Term Post-LOCA Core Subcriticality Evaluations"	ECATI	Low			Closed IR 99029
R.4.3	LER 50-315/98029-01, "Spent Fuel Pool Ventilation Inoperable Due to Original Design Deficiency"	ECATI	Low			Closed IR 99029
	Guidelines for	Restart Appr	roval			
C.1.1	Root Cause Determination					
C.1.1.b	Potential root causes of the conditions requiring shutdown and any associated problems were thoroughly evaluated.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.1.1.c	The scope of the analysis considered the applicability of related issues on similar systems, structures, components, procedures, processes, or activities at their own and other industry facilities in an attempt to identify trends or generic industry concerns.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.1.e	Rationale for rejecting potential root causes was clearly defined and documented for all root causes evaluated.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.1.f	The licensee's rationale for terminating the root cause and casual factors analyses was based on a documented process that provides a reasonable basis for all conclusions reached.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.1.g	The population of potential root causes and their respective evaluations have been independently reviewed by the licensee's oversight committee.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2	Corrective Action Development					
C.1.2.a	The proposed corrective actions are clearly cross-referenced to all of the associated root causes and causal factors they are intended to correct as appropriate.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.b	Each of the corrective actions is assigned an appropriate priority based on safety significance to ensure the proper resources and attention are devoted.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.c	Proposed corrective actions identify the desired conditions to be achieved and are adequate to preclude repetition.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.1.2.d	Corrective actions are sufficiently detailed to ensure that all activities related to completion of the corrective action have been identified (i.e., procedure or drawing changes, Technical Specification changes, etc.).	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.e	Corrective actions include restoring systems and equipment to service and verifying they can perform their intended safety functions through post-maintenance or post-modification testing.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.f	The licensee performed safety evaluations to ensure that corrective actions (e.g., procedure changes or modifications) did not result in a loss of safety margin.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Items 2 and 4.	Closed 0350 Mtg. 05/24/00
C.1.2.g	The licensee adhered to applicable industry codes and standards during the development and analysis of corrective actions.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.h	The licensee expanded the scope of the corrective actions to consider all of the casual factors that contributed to the deficiency or problem, including potential generic concerns.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.i	Development of the corrective actions included insights from the organizations or individuals that may have contributed to the event, those responsible for developing the corrective actions, and those responsible for implementing the corrective actions.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.2.j	Interim corrective actions have been developed and documented when permanent corrective action will take an excessive amount of time to implement or cannot be completed before the licensee plans to restart the facility.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/24/00

ltem No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.1.2.k	All corrective actions have been incorporated into a comprehensive corrective action plan, which has been approved by the licensee's independent oversight committee.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
					IR 2000013	
C.1.3	Corrective Action Plan Implementation and Effective	eness				
C.1.3.a	Each of the corrective actions is assigned a required start and completion date commensurate with the complexity and safety significance of the action.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.3.b	An organization and individual have been designated with lead responsibility for each of the corrective actions.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.3.c	The responsible individual has sufficient authority, resources, and management support to ensure the action will be adequately completed.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.3.d	The licensee has defined objectives to be achieved from implementing the corrective action plan, including interim objectives to assess the progress of the plan. The objectives are focused on ensuring a lasting improvement in the operation and maintenance of the plant.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.3.e	Whenever possible, the licensee's objectives are based on a measurable set of criteria that the licensee can track and trend, as appropriate, to provide continuous monitoring of the implementation and effectiveness of the corrective action plan. These measures should form the acceptance criteria for closure and provide precursor indication of declining performance.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2. IR 2000013	Closed 0350 Mtg. 05/10/00
C.1.3.f	The licensee has anticipated and addressed potential conflicts of implementing the corrective action plan with existing facility operational (maintenance, engineering, etc.) practices, regulatory requirements, or personnel activities.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.1.3.g	The corrective action plan contains guidance for the licensee to assess changing information or conditions to determine whether the licensee must modify the corrective action plan.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
					IR 2000013	
C.1.3.h	The licensee has developed training on both lessons learned from the event analysis and root cause determination and the technical and administrative changes made to the facilities or practices that includes a discussion regarding why the changes are necessary.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.3.i	The corrective action plan includes requirements to have self-assessments, and as necessary independent assessments, of the implementation and effectiveness of the plan.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.1.3.j	In cases where long term actions remain to be accomplished, the licensee has clearly documented when the action will be complete, the basis for the delay in completing the actions, and how the action will be tracked and trended to ensure completion.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/24/00
C.1.3.k	The licensee has established a predefined time frame following completion of the corrective actions during which they will continue to monitor the effectiveness of the corrective actions.	MC 0350 Panel	High	N/A	See also Case Specific Checklist Item 2.	Closed 0350 Mtg. 05/10/00
C.2.1	Self-Assessment Capability					
C.2.1.a	Effectiveness of Quality Assurance Program.	SRI	High	N/A		Closed IR 99022
C.2.1.c	Effectiveness of licensee's Independent Review Groups.	SRI	High	N/A	IR 2000013	Closed 0350 Mtg. 05/24/00
C.2.1.d	Effectiveness of deficiency reporting system.	SRI	High	N/A		Closed IR 99022
C.3.1	Assessment of Staff					
C.3.1.a	Demonstrated commitment to achieving improved performance through the results of the programmatic readiness assessment.	SRI	High	N/A		Closed IR 99022

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.3.1.d	Understanding of plant issues and corrective actions.	SRI	High	N/A	IR 2000013	Closed 0350 Mtg. 05/24/00
C.3.2	Assessment of Corporate Support					
C.3.2.a	Demonstrated commitment to achieving improved performance through the results of the programmatic readiness assessment.	SRI	High	N/A		Closed IR 99022
C.3.2.e	Effectiveness of corporate engineering support.	EFTI	High	N/A		Closed IR 2000007
C.3.2.f	Effectiveness of corporate design modification process.	EFTI	High	N/A		Closed IR 2000007
C.3.2.g	Effectiveness of licensing support.	NRR	High	N/A	IR 2000016	Closed 0350 Mtg. 06/02/00
C.3.3	Operator Issues					
C.3.3.d	Effectiveness of restart simulator/required training necessary to re-familiarize personnel with operating conditions.	SRI RRATI	High	N/A	See also Case Specific Checklist Item 5.	Closed 0350 Mtg. 05/19/00
C.3.3.e	Assessment of plant staff performance during restart. Sustained control room observations by NRC personnel	RRATI	High	N/A		Closed 0350 Mtg. 05/19/00
C.4	Assessment of Physical Readiness of the Plant					
C.4.a	Operability of Technical Specification systems, specifically those with identified operational, design, and maintenance issues.	SRI RRATI	High	N/A	See also Case Specific Checklist Items 6 through 12 and 16. IR 2000016	Closed 0350 Mtg. 06/05/00
C.4.b	Operability of required secondary and support systems.	SRI RRATI	High	N/A	See also Case Specific Checklist Items 6 through 12 and 16.	Closed 0350 Mtg. 05/19/00
C.4.c	Results of pre-startup testing.	SRI	High	N/A	IR 2000016	Closed 0350 Mtg. 06/05/00
C.4.d	Adequacy of system lineups.	SRI	High	N/A	IR 2000016	Closed 0350 Mtg. 06/05/00

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.4.e	Adequacy of surveillance tests/test program.	SRI SI	High	N/A	See also Case Specific Checklist Item 1.	Closed IR 2000001
C.4.f	Significant hardware issues resolved (i.e., equipment with poor material condition, equipment aging, modifications).	SRI	High	N/A	See also Case Specific Checklist Items 6 through 12 and 16.	Closed 0350 Mtg. 05/01/00
C.4.g	Adequacy of the power ascension testing program.	SRI	High	N/A	IR 2000016	Closed 0350 Mtg. 06/05/00
C.4.h	Effectiveness of the plant maintenance program.	SRI	High	N/A	IR 2000016	Closed 0350 Mtg. 06/05/00
C.4.i	Maintenance backlog managed and impact on operation assessed.	SRI SRA	High	N/A	IR 2000013	Closed 0350 Mtg. 05/24/00
C.4.j	Adequacy of plant housekeeping and equipment storage.	SRI	High	N/A	IR 2000016	Closed 0350 Mtg. 06/05/00
C.5	Assessment of Compliance with Regulatory Require	ements				
C.5.a	Applicable licensee amendments have been issued.	NRR	High	N/A	IR 2000016	Closed 0350 Mtg. 05/30/00
C.5.b	Applicable exemptions have been granted.	NRR	High	N/A	IR 2000016	Closed 0350 Mtg. 05/30/00
C.5.c	Applicable reliefs have been granted.	NRR	High	N/A	IR 2000016	Closed 0350 Mtg. 05/30/00
C.5.d	Imposed orders have been modified or rescinded.	MC 0350 Panel	High	N/A	IR 2000016	Closed 0350 Mtg. 06/02/00
C.5.e	Confirmatory Action Letter conditions have been satisfied.	MC 0350 Panel	High	N/A		Closed IR 99022

Item No.	Description	NRC Lead	Priority	Licensee Status	Comments	Status
C.5.f	Significant enforcement issues have been resolved.	MC 0350 Panel	High	N/A	IR 2000013	Closed 0350 Mtg. 05/24/00
C.5.g	Allegations have been appropriately addressed.	MC 0350 Panel	High	N/A		Open
C.5.h	10 CFR 2.206 Petitions have been appropriately addressed.	NRR	High	N/A	IR 2000016	Closed 0350 Mtg. 05/30/00
C.6	Coordination with Interested Agencies and Parties					
C.6.e	Appropriate state and local officials. -FEMA -Congressional Affairs -Inform Stakeholders	RIII State Liaison Officer MC 0350 Panel	High	N/A		Open
C.6.f	Appropriate public interest groups.	Public Affairs	High	N/A		Open
C.6.g	Local news media.	Public Affairs	High	N/A		Open