Waterford 3
1Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Jun 26, 2004
Identified By: NRC
Item Type: FIN Finding
Improper Maintenance Activities resulting in Plant Down Power
A self-revealing finding was identified involving improper installation of an O-ring for Emergency Header Check Valve EH-1285. This resulted in an unisolable hydraulic fluid leak in the main turbine electro-hydraulic control system. Entergy elected to reduce reactor power to less than 20 percent and manually trip the main turbine on February 14, 2004. This self-revealing finding is greater than minor because it is associated with the initiating event cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operation. The human performance attribute was affected in that the performance deficiency resulted in a perturbation in plant stability by reducing reactor power to less than 20 percent. Although the unisolable hydraulic leak resulted in a plant transient, the finding is of very low safety significance because it did not increase the likelihood of a primary or secondary system loss-of-coolant accident initiator, did not contribute to the loss of mitigation equipment functions, and did not increase the likelihood of a fire or internal/external flood.

Inspection Report# : 2004003*(pdf)*

Mitigating Systems

Significance: G Dec 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement Effective Actions to Prevent Recurrence of Main Feedwater Isolation Valve Hydraulic System Over-Pressure Conditions
The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to implement effective corrective actions to prevent recurrence for a significant condition adverse to quality affecting operability of the main feedwater isolation valves. Specifically, on multiple occasions accumulator over-pressure conditions have occurred, resulting from degraded hydraulic fluid adversely affecting the hydraulic actuator pressure relief system. These over-pressure conditions potentially result in valve closure stroke times outside design basis values. The finding was greater than minor because it is associated with the mitigating systems cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. The finding was evaluated using the Inspection Manual Chapter 0609, Significance Determination Process, Phase 1 Worksheet for mitigating systems. The finding was determined to be of very low risk significance because the over-pressure conditions did not represent an actual loss of a safety function of a single train for greater than its Technical Specification allowed outage time.

Inspection Report# : 2004005*(pdf)*

Significance: G Dec 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Control Room Electrical Isaolation During Transfer to the Alternate Shutdown Panel
The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix R, Section III.L.3, for the failure to provide electrical independence in the Waterford design that included a neutral (ground) wire that was not isolated from the control room during transfer to the alternative shutdown panel. Entergy initiated Condition Report WF3-2004-03541 to track the modification to isolate the neutral wire for the affected safe shutdown circuits. The modification will bring Waterford into compliance with Appendix R. This finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of protection against external factors (fire) and it has the potential to impact the mitigating systems cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. The violation is associated with degradation of a fire protection feature. Using Part 1 of the Inspection Manual Chapter 0609, fire protection Significance Determination Process Phase 1 Worksheet, the performance issue was determined to be in the postfire safe shutdown category. The degradation rating was low based on Entergy's determination that there were no existing conditions that would prevent the plant from achieving and maintaining a safe shutdown in the event of a control room fire, if the installed protective devices always operated within their designed tripping characteristics. Therefore, the finding screens as Green or of very low safety significance in the

Phase 1 Worksheet. This violation is being treated as a noncited violation consistent with Section VI.A of the Enforcement Policy.

Inspection Report# : 2004005*(pdf)*

Significance: N/A Sep 27, 2004
Identified By: NRC
Item Type: FIN Finding
Failure to establish appropriate instructions and to accomplish those instructions for installation of the emergency diesel generator Train A
The NRC performed this supplemental inspection to assess the Entergy Operations, Inc. evaluation associated with the failure to establish appropriate instructions and accomplish those instructions for installation of a fuel oil line for the Train A emergency diesel generator in May 2003. This was a violation of 10 CFR Part 50, Appendix B, Criterion V. This failure resulted in uneven and excessive scoring of the tubing that ultimately led to a complete 360 degree failure of the fuel supply line on September 29, 2003, during a monthly surveillance test, which rendered the Train A emergency diesel generator inoperable.

The NRC concluded that Entergy Operations, Inc. performed thorough evaluations of the emergency diesel generator fuel oil line failure. The root causes of the finding were adequately defined and understood. The corrective actions resulting from the evaluations appropriately addressed the identified causes. The contributing causes for the two noncited violations identified during this inspection are consistent with the finding from the diesel fuel oil line failure, and the corrective actions are consistent with the ongoing corrective actions to improve maintenance work instructions. This included development of work instructions for new and the remaking of existing compression fittings, establishment of maintenance technician qualification requirements for compression fittings, and development of training on tube bending.

Inspection Report# : 2004008*(pdf)*

Significance: G Sep 26, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Adequate Environmental Qualification Records
The inspectors identified a noncited violation of 10 CFR 50.49(j) for the failure to maintain an auditable record demonstrating that electric equipment important to safety is environmentally qualified for its intended application. Specifically, it was identified that nonconservative temperature profiles were utilized to calculate the qualified life of ASCO NP8300 series solenoid-operated valves. The finding was more than minor since if left uncorrected it would become a more significant safety concern. Specifically, the failure to maintain electrical equipment in an environmentally qualified configuration could adversely impact the ability of such mitigating equipment to perform its safety function during design-basis accident conditions. This finding was of very low safety significance since additional analysis demonstrated that affected electrical equipment currently installed in the plant was environmentally qualifiable. Therefore, this deficiency did not result in any loss of affected equipment safety function.

Inspection Report# : 2004004*(pdf)*

Significance: G Sep 26, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Maintain Design Control of Safety Injection Sump Recirculation Piping
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, for the failure to maintain design control of the containment safety injection sump recirculation piping. This deficiency resulted in inappropriately maintaining a section of the piping void of water, potentially affecting the operability of the high-pressure safety injection and containment spray pumps during postulated design-basis accident conditions following a recirculation actuation signal. This finding was more than minor because it potentially affected the mitigating system cornerstone objective of ensuring the capability of the high-pressure safety injection and containment spray systems to perform their design-basis functions. The finding was determined to be of very low safety significance because the design deficiency was confirmed not to result in loss of function per Generic Letter 91-18, Revision 1.

Inspection Report# : 2004004*(pdf)*

Significance: G May 21, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Correct Over-pressure Condition in Main Feed Water Isolation Valve Hydraulic Operating Systems
The team identified a 10 CFR 50, Appendix B, Criterion XVI, noncited violation for situations where the licensee failed to promptly correct conditions adverse to quality associated with the main feed isolation valve hydraulic actuating systems. In two cases, the licensee failed to promptly correct instances where the hydraulic actuator thermal relief valves failed to properly function. Consequently, the hydraulic portion of the valve actuator experienced repetitive over-pressure conditions. In one case, the licensee failed to properly address system operability and, for a two-week period, actual valve operability was unknown. The issue was more than minor because it affected the mitigating systems cornerstone objective to ensure the availability of systems that respond to initiating events. The finding was determined to be of very low risk

significance because each issue: was not a design or qualification deficiency; did not result in the loss of a safety system; did not represent an actual loss of a safety function of a single train for greater than its technical specification allowed outage time; did not represent an actual loss of safety function of one or more non-Technical Specification trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours; and was not potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event. Because the failure to promptly identify and correct the over-pressure condition was of very low safety significance and has been entered into the licensee's corrective action program as condition reports CR-WF3-2004-1533, 1540 and 1551, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy.

Inspection Report# : 2004006*(pdf)*

Barrier Integrity

Significance: G Dec 31, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Adequate Test Controls for Leak Testing Fluid Systems Outside Containment that Contain High Radioactive Fluid
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Section XI, "Test Control," for the failure to establish adequate test controls for leak testing those portions of fluid systems outside containment that could contain highly radioactive fluid during a serious transient or accident. This performance deficiency could result in underestimating the leak rate of highly radioactive fluid into the reactor auxiliary building during accident conditions. The finding was greater than minor because it affected the reactor safety barrier integrity cornerstone for providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was evaluated using the Inspection Manual Chapter 0609, Significance Determination Process, Phase 1 Worksheet for barrier integrity. The finding was only of very low safety significance because it did not represent an actual reduction of the atmospheric pressure control function of the reactor containment and it did not result in an actual open pathway affecting the physical integrity of reactor containment.
Inspection Report# : 2004005*(pdf)*

Significance: G Sep 26, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Pevent Recurrence of Main Steam Isolation Valve Failures
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, for failure to determine the cause and preclude recurrence of main steam isolation solenoid-operated dump valve failures. This failure affected the primary containment isolation function for the main steam system isolation valves. The primary cause of this finding was related to the crosscutting area of problem identification and resolution. The finding was greater than minor because if left uncorrected the finding could become a more safety significant concern. The finding was only of very low safety significance because it did not represent an actual reduction of the atmospheric pressure control function of the reactor containment, it did not result in an actual open pathway affecting the physical integrity of reactor containment, and the main steam isolation valves were inoperable for less time than the allowed Technical Specification outage time. The valve was repaired and returned to service.

Inspection Report# : 2004004*(pdf)*

Significance: G Aug 27, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Maintenance Instructions Affecting the Emergency Feedwater System
A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, was identified when the valve failed in the open position. The failure resulted from inappropriate work instructions for replacing the actuator diaphragm on the emergency feedwater to Steam Generator 1 backup isolation valve. As a result, the diaphragm was installed incorrectly, resulting in the failure on June 14, 2004. The finding was greater than minor because it affected the operability of a containment isolation valve and the availability of the emergency feedwater system, a mitigating system. The finding was of very low safety significance because a second isolation valve was available and could have performed the isolation function. The valve was promptly repaired and a condition report was initiated. The emergency feedwater system was inoperable for less than the allowed Technical Specification outage time.

Inspection Report# : 2004008*(pdf)*

Significance: G Aug 27, 2004

Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Corrective Action Affecting Main Feedwater Isolation Valve
A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, was identified for the failure to take adequate corrective action to ensure that the torque applied to the flow control valve for Accumulator B of main feedwater isolation Valve No. 1 was sufficient to prevent an O-ring from extruding, resulting in a loss of system hydraulic fluid and rendering the valve inoperable on June 20, 2004. The primary cause of the finding was related to the crosscutting area of problem identification and resolution. The finding was greater than minor because it affected the reactor safety barrier cornerstone attribute for maintaining functionality of the containment boundary. The main feedwater isolation valve was repaired within the Technical Specification allowed outage time and a condition report was initiated. This finding was of very low safety significance because it did not result in an actual open pathway affecting the physical integrity of reactor containment and the main feedwater isolation valve was inoperable for less time than the allowed by the Technical Specification outage time.

Inspection Report# : 2004008*(pdf)*

Significance: G May 21, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Identify Inappropriate Assumption and Correct Control Room Operator Dose Analysis
The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, for the failure to promptly identify and correct a condition adverse to quality. Specifically, on multiple occasions the licensee failed to identify and correct an inappropriate value of the unfiltered inleakage parameter used to calculate the control room operator dose for design basis accident conditions involving radiological releases. This failure resulted in significantly underestimating the actual dose to operators. This finding was greater than minor because it affected the barrier integrity cornerstone objective related to design control of the control room envelope and was determined to be of very low safety significance because the deficiency only affected the radiological barrier function provided for the control room. Because the failure to promptly identify and correct the analysis was of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-WF3-2004-1403, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy.

Inspection Report# : 2004006*(pdf)*

Significance: G May 21, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Correct a Known Deficient Condition Involving the Failure to Account for Instrument Uncertainty to Satisfy Technical Specification Surveillance Requirement
The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, for the failure to promptly identify and correct a condition adverse to quality. Specifically, on multiple occasions the licensee failed to correct a known deficient condition involving the failure to account for instrument uncertainty to satisfy Technical Specification Surveillance Requirement 4.7.6.5.a. This failure potentially affects the ability of the control room envelope to perform its design function with respect to protecting operators from postulated design basis accidents resulting in radiological releases. This finding was greater than minor because it affected the barrier integrity cornerstone objective related to maintaining the barrier function of the control room envelope. The finding was determined to be of very low safety significance because the deficiency only affected the radiological barrier function provided for the control room. Because the failure to promptly identify and correct the analysis was of very low safety significance and has been entered into the licensee's corrective action program as condition report CR-WF3-2004-1561, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy.

Inspection Report# : 2004006*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Nov 11, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Technical Specification Violation for Failure to Follow Radiation Work Permit Requirements
The inspector identified a self-revealing noncited violation of Technical Specification 6.8.1 because Entergy failed to follow radiation work

permit requirements. On November 12, 2003, two individuals' faces became contaminated while performing maintenance on Steam Generator 2 manway studs. Personnel contamination monitors alarmed upon the exit of the individuals from the controlled access area. These alarms prompted Entergy to investigate the events and conclude that multiple violations of Radiation Work Permit 2003-1509, Task 3, occurred. Specifically, workers did not: (1) wear face shields or power visors during stud work, (2) have constant radiation protection technician coverage, (3) wear telemetry electronic dosimeters and move them to the head, or (4) wear lapel air samplers. This finding was entered into Entergy's corrective action program.
This finding is greater than minor because it is associated with the Occupational Radiation Safety attribute of exposure control and affected the cornerstone objective because not following radiation work permit requirements could increase personnel dose. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance because it did not involve: (1) as low as is reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

Inspection Report# : 2004005*(pdf)*

Public Radiation Safety

Significance: G Mar 04, 2005
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to ship radioactive material correctly
The team reviewed a self-revealing, noncited violation of 10 CFR 71.5, which occurred when the licensee failed to ship radioactive material correctly. A radioactive shipment classified as an "excepted package-limited quantity" exceeded the external dose rate limitation of 0.5 millirem per hour on the surface of the package. The package recipient identified dose rates of 1.2 millirems per hour on the exterior surface of the package and notified the licensee of the problem. The finding is greater than minor because it was associated with a Public Radiation Safety cornerstone attribute (human performance) and it affected the associated cornerstone objective because the failure to correctly ship radioactive material decreases the licensee's assurance that the public will not receive unnecessary dose. However, this finding cannot be evaluated by the Public Radiation Safety Significance Determination Process because it did not involve radioactive shipments classified as Schedule 5 through 11, as described in NUREG-1660, and it did not fit traditional enforcement. Therefore, the finding was reviewed by NRC management and determined to be of very low safety significance. Additionally, this finding had cross-cutting aspects associated with human performance. Licensee personnel directly contributed to the finding when they failed to ensure that the package did not exceed the dose rate limit. The finding was placed into the licensee's corrective action program as Condition Report WF3-2003-03514.

Inspection Report# : 2005009*(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A May 21, 2004
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team reviewed approximately 135 corrective action program documents, apparent and root cause analyses and plant procedures for the identification and resolution of problems. Based on this review, the team found that the licensee's process to identify, prioritize, evaluate, and correct problems was generally effective; thresholds for identifying issues remained appropriately low and, in most cases, corrective actions were adequate to address conditions adverse to quality. However, a number of issues were identified associated with the proper identification, evaluation and correction of degraded conditions in the plant. Most of these issues were identified when the team reviewed corrective actions associated with longstanding degraded conditions and design issues at Waterford 3, which had cross-cutting aspects in the area of problem identification and resolution. The team concluded that a positive safety-conscience work environment exists at Waterford 3. The team determined that employees and contractors feel free to raise safety concerns to their supervision or bring concerns to the employees concern program.

Inspection Report# : 2004006*(pdf)*

Last modified : June 17, 2005