

## Turkey Point 4 3Q/2012 Plant Inspection Findings

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### Initiating Events

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### Mitigating Systems

**Significance:** G Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Emergency lighting to auxiliary feedwater area disabled**

The inspectors identified a non-cited violation of the Units 3 and 4 operating licenses condition 3.D, Fire Protection, when the licensee failed to provide emergency lighting in the common auxiliary feedwater (AFW) cage and other areas. The electrical panel that supported normal lighting in the area was taken out of service for maintenance thus placing the emergency lights on battery power until the batteries depleted and the areas became dark, impacting the ability of operators to complete manual actions in the area, if needed. The licensee documented the issue in the corrective action program (CAP) as AR 1738082.

The inspectors determined that the failure to provide emergency lighting in areas requiring local manual actions to safely mitigate certain fire events, and the associated access/egress routes, was a performance deficiency. The issue was more than minor because the objective of the Mitigating System Cornerstone to ensure the availability of fire protection equipment was affected when emergency lighting was not provided. The inspectors assessed the finding using NRC Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," and assigned a low degradation rating because of the reasonable likelihood that plant operators would obtain alternate lighting and complete the prescribed manual actions. The finding screened as having very low safety significance. The cross cutting aspect of Work Control – Planning, (H.3(a)), was assigned because the licensee did not use risk insights, did not assess environmental conditions (lighting) that may have impacted human performance, and did not plan for contingencies nor compensatory actions when the normal lighting was removed from service leading to loss of emergency lighting.

Inspection Report# : [2012002](#) (*pdf*)

**Significance:** G Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Control power cables repeatedly submerged in ground water, contrary to design**

A self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified when FPL did not maintain safety-related power cables in the environment for which they were designed and tested. Specifically, 125 volt DC control power cables feeding various safety related components and cables supporting other risk significant equipment had been repeatedly submerged in ground water for extended periods of time and this submergence had the potential to affect the ability of the cables to perform safety related functions. The issue was entered into the licensee's CAP as AR 1717619. Although predominantly Unit 3 cables were submerged, because equipment is shared, both units were affected.

Allowing water accumulation in the manhole(s) after disabling of the sump pump without compensatory measures to keep the safety related and risk significant cables dry, resulted in subjecting the cables to an environment for which they were not designed, and was a performance deficiency. The finding was more than minor because it challenged the reliability of systems that respond to initiating events to prevent undesirable consequences, which is an attribute of the Mitigating Systems cornerstone. The inspectors evaluated the finding in accordance with IMC 0609.04, Phase 1, "Initial Screening and Characterization of Findings." The finding was of very low safety significance because it did not represent an actual loss of safety function or contribute to external event core damage sequences. The finding had a cross-cutting aspect in Problem Identification and Resolution, Corrective Action Program, (P.1(c)), because FPL did not thoroughly evaluate submerged cables such that the resolutions addressed causes and extent of conditions, including evaluating for operability.

Inspection Report# : [2012002](#) (*pdf*)

**Significance:** 6 Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct Valve Deficiency Results in Both Headers of Intake Cooling Water Inoperable**

A self-revealing Non-cited violation of 10 CFR 50 Criterion XVI was identified when the licensee failed to correct a degraded butterfly valve in the Unit 3 intake cooling water system. On August 11, 2011, failure of this valve led to a loss of intake cooling water (ICW) flow to the component cooling water heat exchangers. The licensee documented the failure in their corrective action program as AR 01680272 and initiated a cause investigation. An NRC special inspection of this occurrence was documented in NRC Inspection Report 05000250/2011013.

The licensee's failure to take prompt corrective actions for a degraded valve, though it had been identified in 2007 as vibrating excessively, was a performance deficiency. This performance deficiency was considered more than minor because it could be reasonably viewed as a precursor to a significant event, the loss of all intake cooling water. A Senior Reactor Analyst in a Phase 3 risk assessment, determined the increase in risk to either unit was of very low risk significance i.e., Green. Unit 3 risk was assessed because the event occurred on that unit; however Unit 4 risk was also assessed because the same vulnerability existed on the ICW valves on that unit (e.g., similar design, maintenance history, etc.). The main contributors to the low risk results were: 1) the recovery probability of the ICW system, given the extended time available to operators before a RCP seal LOCA could occur; and 2) the multiple redundant sources available to cool the core should the CCW system fail. The dominant core damage scenarios were valid demands for a reactor trip followed by the failure to recover ICW proceeding to a RCP seal LOCA and core damage. The inspectors determined that the cause of this finding was related to the Problem Identification and Resolution cross cutting component when the licensee failed to take appropriate corrective action to address safety issues (valve fluttering) in a timely manner, commensurate with the safety significance.

Inspection Report# : [2011005](#) (*pdf*)

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## Barrier Integrity

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## Emergency Preparedness

**Significance:** **W** Dec 31, 2011

Identified By: NRC

Item Type: VIO Violation

**Failure to maintain TSC habitability**

The licensee identified an Apparent Violation (AV) of 10 CFR Part 50.54(q), which requires that adequate emergency facilities and equipment to support the emergency response are provided and maintained. During the periods from December 4, 2010 to July 13, 2011, and from October 10 to October 28, 2011, the licensee failed to maintain in effect a provision of its emergency plan in that adequate emergency facilities and equipment to support emergency response were not provided when portions of the Technical Support Center ventilation system were removed from service by tagging open the ventilation system damper poser supply without compensatory measures and without an evaluation that described how effectiveness of the emergency plan was not decreased. As a result, had the facility been activated, protection of personnel assigned to respond in the TSC would not have been protected from radiological hazards that could occur in some accidents. The licensee documented this occurrence in the corrective actions program as AR 1701357.

The finding was greater than minor because it affected the Emergency Preparedness Cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The Emergency Preparedness cornerstone was affected in that during the time the Technical Support Center was not functional, it did not meet 10 CFR 50.47(b) Planning Standards program elements and personnel assigned to the TSC during an emergency may not have been protected from radiological hazards. This finding was evaluated in accordance with Manual Chapter 0609, Appendix B, Emergency Preparedness Significance Determination Process, Section 4.8 and Emergency Preparedness Significance Determination Process, Sheet 1, Failure to Comply, and determined to be a finding of low to moderate safety significance (White) because there was a loss of the planning standard function "Adequate facilities and equipment are maintained to support emergency response". The NRC considered that protection of personnel from radiological hazards could not be assured in all cases when the ventilation system was degraded. The inspectors determined that the Technical Support Center was not functional for a period of longer than 7 days from time of discovery of the ventilation system outage, to the extent that any key ERO member would not be protected from radiological hazards when completing assigned emergency response plan functions in the absence of compensatory measures. This condition occurred twice in December 2010 to July 2011 and again in October 2011. The inspectors determined that the planning standard function failure was a loss of planning standard function, "Adequate facilities and equipment are maintained to support emergency response," as described in Section 4.8 of Manual Chapter 0609, Appendix B. Using Sheet 1, Failure to Comply, significance determination process flow chart, the failure to comply, with a planning standard problem, no risk significant planning standard problem, with a planning standard function failure, results in a White significance. The two events, December 2010 to July 2011 and October 2011 were assessed as a single finding with a common performance deficiency. The cross cutting component in Problem Identification and Resolution was proposed when the licensee did not thoroughly evaluate problems with the TSC ventilation system as necessary, including properly classifying, prioritizing, and evaluating for operability and reportability, conditions adverse to quality.

10 CFR 50.54(q) requires, in part, that a licensee authorized to operate a nuclear power reactor shall follow and maintain the effectiveness of an emergency plan which meet the standards of 10 CFR 50.47(b). Planning standard 10 CFR 50.47(b)(8) specifies as a required element of a licensee's emergency response plan that adequate emergency facilities and equipment to support the emergency response are provided and maintained.

Contrary to the above, from December 4, 2010, to July 13, 2011, and from October 10 to October 28, 2011, the licensee failed to maintain the effectiveness of its emergency plan in that adequate emergency facilities and equipment to support emergency response were not provided and maintained. Specifically, the licensee failed to follow and

maintain the effectiveness of its emergency plan when portions of the Technical Support Center (TSC) ventilation system were removed from service for maintenance, without compensatory measures. Removal of the TSC ventilation system from service without implementation of compensatory measures during these periods constituted a failure to provide and maintain an adequate emergency facility.

This violation is associated with a White Significance Determination Process finding in the Emergency Preparedness cornerstone.

Inspection Report# : [2011005](#) (*pdf*)

Inspection Report# : [2012010](#) (*pdf*)

**Significance:** N/A Dec 31, 2011

Identified By: NRC

Item Type: VIO Violation

**Failure to make a required 8 hour NRC report for major loss of emergency assessment capability**

The inspectors identified an Apparent Violation of 10 CFR 50.72(b)(3)(xiii) when a major loss of emergency assessment capability was not reported to the NRC within 8 hours as required, impacting NRC's regulatory function.

The TSC ventilation system was removed from service from December 4, 2010 until July 13, 2011, affecting the habitability of the TSC for emergency responders, and the occurrence was not reported. The issue was identified to the licensee by the inspectors after review of NRC Event Number 47387.

The finding was more than minor because it impacted the NRC's regulatory process, which relies on certain plant conditions being properly reported to the NRC. Because this finding impacted the regulatory process, it was evaluated using traditional enforcement and is being considered for escalated enforcement action in accordance with NRC's Enforcement Policy. No cross-cutting aspect associated with this issue was identified.

10 CFR 50.72(b)(3)(xiii) states that a licensee shall notify the NRC as soon as practical and in all cases within eight hours of the occurrence of any event that results in a major loss of emergency assessment capability, offsite response capability, or offsite communications capability (e.g., significant portion of control room indication, Emergency Notification System, or offsite notification system).

Contrary to the above, from December 4, 2010, to July 13, 2011, the licensee failed to report the occurrence of a major loss of emergency assessment capability. Specifically, the licensee failed to maintain an adequate emergency facility when portions of the TSC ventilation system were removed from service without compensatory measures, and the licensee failed to report the occurrence as required.

This is a Severity Level III violation (Enforcement Policy paragraph 6.6)

Civil Penalty - \$ 140,000

Inspection Report# : [2011005](#) (*pdf*)

Inspection Report# : [2012010](#) (*pdf*)

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## Occupational Radiation Safety

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## Public Radiation Safety

## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

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