

# Turkey Point 4

## 3Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:**  Sep 30, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to provide adequate instructions when working on the reactor protection system results in reactor trip**

A self-revealing non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified when the licensee started corrective maintenance on the Unit 4 reactor protection system with an inadequate procedure. As a result, a reactor trip occurred when a reactor trip circuit was not placed on bypass as an initial condition needed to safely complete the work. During the event investigation, the licensee determined that neither the work order, nor the pre-job review identified the need to place the affected train of the reactor protection system on the bypass breaker.

The finding was determined to be more than minor because it affects the Initiating Events cornerstone attribute of procedure quality and adversely affected the cornerstone objective to limit the likelihood of an event that upsets plant stability by resulting in a reactor trip. The finding was evaluated in accordance with IMC 0609, Attachment 4, and determined to be of very low safety significance (Green) per SDP Phase 1 determination because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of Human Performance, Work Control H.3(b) because the licensee did not appropriately coordinate work activities by incorporating actions to address the need to keep personnel apprised of the operational impact of work and plant conditions that may affect work activities, resulting in a reactor trip. (1R12)

Inspection Report# : [2010004](#) (*pdf*)

**Significance:**  Jun 30, 2009

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Inadequate Evaluation Of Damaged Rod Control Extension Results In High Risk Evolution And Risk Condition Yellow**

A Self-revealing Finding was identified when the licensee did not manage maintenance activities adequately to identify and repair a damaged rod control drive component on Unit 3 prior to setting the reactor vessel closure head on the reactor vessel flange. As a result, the subsequently filled reactor coolant system had to be drained again to 2 feet below the reactor vessel flange (a high risk activity) placing the unit in the licensee's risk condition Yellow for repairs. The licensee documented this in condition report (CR) 2009-10284.

The finding was more than minor because it affected the Human Performance attribute of Initiating Events cornerstone and the licensee's risk assessment failed to anticipate that the maintenance activity could result in another plant draining evolution with its inherent risk of an initiating event of loss of inventory or shutdown cooling. With appropriate mitigating equipment available, the finding screened to be of very low safety significance (Green). The finding affected the cross cutting area of Human Performance, Work Practices, Supervisory & Management Oversight (H.4(c)) because the licensee did not appropriately provide oversight of work activities, including contractors, such that nuclear safety is supported. (1R20)

Inspection Report# : [2009003](#) (*pdf*)

**Significance:**  Jun 30, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

**Maintenance causes smoke and fumes to enter the control room causing fire alarms.**

A Self-Revealing finding of very low safety significance was identified after smoke and welding fumes from maintenance entered the control room through the ventilation system causing smoke alarms. When identified, the licensee stopped the maintenance and entered the issue into the corrective action program as CR 2008-17166.

The Initiating Events cornerstone was affected when smoke alarms occurred requiring the operators to initiate actions to protect themselves and the plant. The event screened as Green when mitigating systems remained unaffected and would have functioned, if needed. The cause of the finding is related to the cross-cutting area of Human Performance, Work Practices, (H.4.b) when personnel did not follow procedures in developing the work package for metalizing operations outside of the control room. (1R05)

Inspection Report# : [2008003](#) (pdf)

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## Mitigating Systems

**Significance:**  May 21, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate procedure implementation resulting in snubber failure.**

The NRC identified a non-cited violation of 10 CFR 50, Appendix B, Criterion V, for the licensee's failure to implement procedures during a visual inspection of safety related seismically qualified snubber SN-4-1039. Specifically, the licensee failed to identify missing, detached, loosened support items, or full thread engagement of all mechanical connections that led to a snubber failure as prescribed in procedure 0-OSP-105.1, Visual Inspection, Removal and Reinstallation of Mechanical Shock Arrestors, section 7.2.1.3.d. The snubber would not have been able to perform its design function to arrest shocks of the main steam piping to the C Steam Generator during seismic events or transients, such as sudden isolation of the main steam isolation valve. The licensee implemented immediate corrective actions which included replacing the snubber in containment, adding specific instructions in procedure 0-OSP-105.1 to specifically inspect the locking ring and correct installation, and to include emphasis on FPL expectations from vendor provided snubber inspection services. The licensee documented this in condition report CR 2008-31372.

The performance deficiency was more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone in that the licensee did not ensure reliability of the snubber to respond to initiating events to prevent undesirable consequences in that the snubber would not have been able to perform its design function to arrest shocks of the main steam piping to the C Steam Generator during seismic events or transients. The finding was screened using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and was determined to have a very low safety significance (Green) because the system remained operable and capable of meeting its design function with no loss of safety function of the C main steam system. This finding was reviewed for cross-cutting aspects and none were identified. (4OA2).

Inspection Report# : [2010006](#) (pdf)

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to implement design controls in a temporary modification.**

The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion III, Design Control, for failing to maintain control of temporary equipment installed on unit 4 A residual heat removal pump piping when the permanent component cooling water flow indication to the pump seal failed high. Operators were using a controlotron as a compensatory measure to verify adequate cooling flow to the unit 4A residual heat removal pump seal and to assure operability of the unit 4A residual heat removal pump. If the controlotron had failed, the operators would not have received a component cooling water low flow alarm in the control room, lack of cooling flow to the pump would have

gone undetected, and operability of the residual heat removal pump could have been affected. The inspectors identified the licensee failed to follow the temporary system alteration procedure to ensure design adequacy and to determine if the alteration required a 10 Code of Federal Regulations (CFR) 50.59 evaluation and NRC approval. The licensee documented this in the corrective action program as condition report 2010-479.

The finding is more than minor because it affected the configuration control attribute of the Mitigating Systems Cornerstone in that it reduced the reliability of the 4A residual heat removal pump with the permanent flow indicator out of service while using an unevaluated controlotron to determine continued operability of the 4A residual heat removal pump. The inspectors screened the finding using NRC Inspection Manual Chapter 0609, Significance Determination of Reactor Inspection Findings for At Power Operations, Phase 1 screening. The finding was of very low safety significance because the design or qualification deficiency did not result in actual loss of operability or functionality of the pump. The cross cutting aspect of Human Performance, Work Practices (H.4(b)) was affected. (1R18)

Inspection Report# : [2010002](#) (*pdf*)

**Significance:**  Jun 30, 2009

Identified By: NRC

Item Type: FIN Finding

**Failure To Maintain Lighting Impedes Compensatory Measure For Failed Fire Detection.**

The inspectors identified a Green finding for failure to correct failed lighting in a Unit 4 electrical penetration room that prevented the hourly rover from adequately compensating for fire detection that was out of service. The inspectors determined that maintaining lighting in areas of degraded fire protection features is not a specific NRC requirement. The licensee documented this in CR 2009-17533.

The finding was more than minor because it affected the External Event attribute of the Mitigating Systems cornerstone and failure to correct a problem that impacted the ability of fire watch personnel to adequately compensate for out of service fire detection equipment could reasonably be viewed as a precursor to a significant fire event. The inspectors evaluated this finding using NRC Inspection Manual Chapter 0609, Appendix F, Fire Protection Significance Determination. The finding was screened as Green because the assigned fire degradation rating was low. The finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, Appropriate & Timely Corrective Actions (P.1(d)) because the licensee did not document and correct a problem that was previously identified. (1R05)

Inspection Report# : [2009003](#) (*pdf*)

**Significance:**  Sep 30, 2007

Identified By: NRC

Item Type: FIN Finding

**Recurring Problems with Alternate Shutdown Communication Equipment**

The inspectors identified a finding when the licensee did not identify and correct an adverse trend of recurring problems with the alternate shutdown communications system. When identified, the licensee entered the issue into the corrective actions program and initiated a review of reliability issues with the communications equipment.

The finding is more than minor because it affects the availability and reliability of the communications system used by plant operators to mitigate certain fire scenarios. The issue was of very low safety significance because an alternate communications system (radios) was available, if needed. The cause was related to the cross-cutting area of problem identification and resolution because the adverse trend of problems with alternate shutdown communications had not been identified nor corrected by the licensee commensurate with its safety significance. (IMC 305, P.1 (d)) (4OA2)

Inspection Report# : [2007004](#) (*pdf*)

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# Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Dec 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Implement Required TS Controls for a High Radiation Area with Dose Rates in Excess of 1000 mrem/hr**

A Self-revealing Non-cited Violation of Technical Specification (TS) 6.12.2, was identified for failure to meet high radiation area (HRA) control requirements for an accessible location, i.e., Unit 4 (U4) reactor auxiliary building (RAB) roof, with radiation levels greater than 1000 millirem per hour (mrem/hr) during refueling activities. Specifically, on November 3, 2009, general area dose rates exceeding 1000 mrem/hr were identified outside of an established HRA posted barricade on the RAB roof adjacent to the outside wall of the Spent Fuel Pool (SFP) building. The HRA posted barricade, i.e., locked-HRA (LHRA) barrier, was established to delineate an area outside of which dose rates would not exceed 1000 mrem/hr. The licensee documented this issue in condition report (CR) 2009-31494.

The finding was more than minor because it affected the Program and Process (exposure control) attribute of the Occupational Radiation Safety cornerstone and the failure of the licensee to implement proper HRA controls which could have led to unanticipated worker exposures. The inspectors evaluated the finding using the Occupational Radiation Safety Significance Determination Process and determined the issue to be of very low safety significance (Green) based on High Radiation Area controls in place for the subject area. The cross-cutting element of Human Performance, Decision-Making (H.1(b)) was affected when the licensee failed to conduct adequate radiological surveys needed to demonstrate compliance with TS HRA requirements for locations potentially having dose rates exceeding 1000 mrem/hr during current Unit 4 refueling activities (2OS1).

Inspection Report# : [2009005](#) (*pdf*)

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## Public Radiation Safety

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to perform adequate surveys to ensure proper estimation of radionuclide concentrations in mechanical filter waste shipments**

The inspectors identified a Green non-cited violation (NCV) of 10 CFR Part 20.1501(a) for the failure to perform adequate surveys to meet the requirements of 10 CFR Part 20 Appendix G. 10 CFR Part 20 Appendix G states that shippers of radioactive waste must identify and quantify radionuclides contained in each waste container. Specifically, the inspectors determined that the use of resin samples to characterize three shipments of mechanical filters in calendar years 2008 and 2009 was inadequate to ensure proper identification and quantification of the radionuclides present in each container. The licensee entered the issue into their corrective action program as condition report (CR) number 2009-32955.

The finding is more than minor because it is associated with the Public Radiation Safety cornerstone attribute of Programs and Processes and adversely affects the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was assessed using the Public Radiation Safety Significance Determination Process (SDP). Based on the fact that subsequent follow up analyses demonstrated that none of the filter waste was

under-classified, the finding was determined to be of very low safety significance (Green). This finding has a crosscutting aspect of Human Performance, Decision Making [H.1(b)], because the decision to use resin samples to characterize filter shipments was based on incorrect assumptions, i.e., that spent resin samples would be representative of the filter waste stream, and those assumptions were not demonstrated to be conservative prior to implementation. (Section 2RS8)

Inspection Report# : [2010003](#) (*pdf*)

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**Significance:** N/A May 21, 2010

Identified By: NRC

Item Type: FIN Finding

### PI&R

The team concluded that, in general, problems were properly identified, evaluated, prioritized, and corrected. The threshold for initiating condition reports (CRs) was appropriately low, as evidenced by the types of problems identified and the number of CRs entered annually into the Corrective Action Program (CAP). Employees were encouraged by management to initiate CRs. However, the team identified deficiency's associated with preventative maintenance (PM) scheduling in that a number of PMs were inadvertently scheduled past their due dates when the licensee began using the PM scheduling tool LCP.net. In addition, the team identified several examples of minor equipment issues that had not been identified by the licensee and entered into the CAP. When identified, the licensee entered these issues into the CAP. Generally, prioritization and evaluation of issues were adequate, formal root cause evaluations for significant problems were adequate, and corrective actions specified for problems were acceptable. Overall, corrective actions developed and implemented for issues were generally effective and implemented in a timely manner.

The team determined that, overall, audits and self-assessments were adequate in identifying deficiencies and areas for improvement in the CAP, and in most cases, appropriate corrective actions were developed to address the issues identified. Operating experience usage was found to be generally acceptable and integrated into the licensee's processes for performing and managing work and plant operations.

Based on discussions and interviews conducted with plant employees from various departments, the inspectors determined that personnel felt free to raise safety concerns to management and use the CAP to resolve those concerns.

Inspection Report# : [2010006](#) (*pdf*)

Last modified : November 29, 2010