Surry 2
4Q/2011 Plant Inspection Findings

Initiating Events

Significance: TBD Dec 31, 2011
Identified By: NRC
Item Type: FIN Finding
Failure to Conduct Reviews of the Vendor Technical Manual for the RCS Standpipe.
The inspectors identified a finding for the licensee's failure to comply with Dominion procedure VPAP 0602, "Vendor Technical Manual Control." Specifically, the licensee failed to review the Vendor Technical Manual (VTM) for the reactor coolant system (RCS) standpipe to determine conformance with established maintenance practices as required by VPAP 0602. As a result, the licensee did not evaluate the need for a periodic maintenance activity associated with the standpipe or if current maintenance practices were adequate in both scope and frequency. This contributed to both decreased standpipe reliability during a high risk reduced inventory configuration and the performance of multiple subsequent entries into that configuration. The licensee entered this issue into their corrective action program as condition report 460261.

The inspectors determined that the failure to review the VTM as required by VPAP-0602 was a performance deficiency that was within the licensee's ability to foresee and correct and which should have been prevented. The inspectors reviewed IMC 0612, Appendix B, issued on 12/24/2009, and determined that the finding was more than minor because it adversely impacted the equipment performance attribute of the initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, the performance deficiency led to the material degradation of the standpipe internals which contributed to both decreased standpipe reliability during a high risk reduced inventory configuration and the performance of multiple subsequent entries into that configuration. In accordance with NRC Inspection Manual Chapter (IMC) 0609, Att. 4, "Phase 1 - Initial Screening and Characterization of Findings," inspectors were directed to use IMC 0609 Appendix G, "Shutdown Operations Significance Determination Process," Attachment 1, Checklist 3 "PWR Cold Shutdown and Refueling Operation - RCS Open and Refueling
Cavity Level < 23' or RCS Closed and No Inventory in Pressurizer – Time to Boiling < 2 hours," and determined the finding required a Phase 3 analysis. Specifically, the inspectors concluded that, in accordance with checklist item II.A.(2), the licensee did not maintain two sources of continuous level instrumentation with the pressurizer empty at the times where the standpipe MCR indication became erratic and had to be declared nonfunctional. Thus, the finding resulted in an increase in the likelihood of a loss of RCS inventory and required a Phase 2/3 evaluation. Consequently, the significance of this finding is to be determined (TBD) pending the results of the significance evaluation. The cause of this finding did not involve a cross-cutting aspect because it is not indicative of current licensee performance because of the time period associated with the receipt of the VTM and its revisions (2002-2003). (Section 4OA5)

Inspection Report# : 2011005 *(pdf)*

Significance: Mar 31, 2011
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Determine the Correct Cause and Prevent Recurrence for a Significant Event
A Green, self-revealing finding was identified for the licensee's failure to comply with the standards established in their corrective action program (CAP) to determine the correct cause and take corrective action to prevent recurrence (CAPR) for a significant event, specifically, an automatic reactor trip following the failure of a Unit 2 'C' reactor coolant loop isolation valve. The licensee entered this issue into their CAP as condition report 412345.

The inspectors determined that the failure to determine the correct cause and take corrective action to prevent recurrence for a significant event was contrary to the requirements of the licensee's CAP procedures and was, therefore, a performance deficiency. The inspectors reviewed IMC 0612, Appendix B, and determined the performance deficiency was more than minor because it adversely affected the equipment performance attribute of the

Initiating Events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors reviewed IMC 0609, Attachment 4 and determined that the finding was of very low safety significance, or Green, because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The cause of this finding involved the cross-cutting area of problem identification and resolution, the component of operating experience, and the aspect of implementing operating experience, P.2(b), because the licensee failed to implement and institutionalize operating experience.

Inspection Report# : 2011002 *(pdf)*

Mitigating Systems

Significance: Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Scaffolding Procedure Requirements
The inspectors identified a NCV of Technical Specifications (TS) 6.4.D for failing to follow the requirements of procedure MA-AA-105, "Scaffolding." Specifically, the licensee did not adequately implement scaffold evaluation, screening, and risk requirements for multiple scaffolds constructed in the vicinity of safety-related equipment.

The inspectors determined that the failure to follow TS required procedure MA-AA-105, "Scaffolding," by not properly identifying scaffolds for safety-related systems and performing the required engineering evaluations, constitutes a performance deficiency. This finding is considered more than minor because it is similar to IMC 0612, Appendix E, Example 4.a in that the licensee routinely failed to perform the required engineering reviews and evaluations for scaffolding. This finding is also associated with the external factors and equipment performance attributes of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors screened this finding in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined the finding was of very low safety significance since it was a deficiency determined not to have resulted in the loss of operability or functionality. The cause of this finding involved the cross-cutting area of human performance, the component of resources and the aspect of training [H.2(b)], because the licensee failed to implement training sufficient to ensure that operators were aware of plant equipment which is designated as safety-related. (Section 1R04)

Inspection Report# : 2011004 *(pdf)*

Significance: Sep 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Consider Instrument Uncertainty and Establish Calibration Controls for Rotameters Used to Vent Gas from ECCS Systems
An NRC-identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XI, "Test Control," (with two examples) was identified for the failure to establish measures to apply rotameter instrument measurement error and appropriate instrument calibration controls or standards when using instruments of this type to determine the size of voids discovered as a result of ECCS system venting. The issue was entered into the licensee's corrective action program (CAP) as CR419024 and CR419243.

The failure to establish and implement measures (1) to ensure the application of +/- 5% rotameter instrument error to as-found void measurement, and (2) to ensure that rotameters calibrated to standard pressure conditions were used when utilizing those instruments to evaluate the size of as-found voids were performance deficiencies. The performance deficiencies were greater than minor, because, if left uncorrected, they could result in a more significant safety concern. Specifically, the performance deficiencies represented programmatic issues and if instrument error and/or appropriate calibration standards were not applied to instruments used for future void characterization, then

sufficient measurement error could reasonably result such that as-found voids, which challenge or exceed established acceptance criteria, may not be identified as intended by post venting evaluations. The finding was screened for significance using the Mitigating Systems cornerstone column of Inspection Manual Chapter (IMC) 0609, Attachment 4, “Phase 1 - Initial Screening and Characterization of Findings,” and determined to be of very low safety significance (Green) because the finding did not represent a design or qualification deficiency, did not represent the loss of a safety system function, did not represent the loss of a train for greater than the allowed outage time, did not represent the loss of risk significant equipment for greater than 24 hours, and was not potentially risk significant due to external events. Because the licensee had failed to implement complete, accurate, and up-to-date controls necessary to ensure that rotameter error and calibration standards were adequately addressed by procedures used to evaluate the impact of voids on
emergency core cooling systems, this finding is assigned a cross-cutting aspect in resources component of the human performance area [H.2(c)]. (Section 4OA5.1)

Inspection Report# : 2011004 *(pdf)*

Significance: Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Qualification Testing of Fire Barrier Penetration Seals
A Green non-cited violation of Surry Units 1 and 2 Operating License Condition 3.I, “Fire Protection,” was identified by the inspectors for failure to have adequate qualification testing results, as directed by Appendix A to Branch Technical Position APCSB 9.5-1. Specifically, the licensee did not have sufficient testing results to qualify certain aluminum conduit configurations that penetrate 3-hour fire rated barriers separating fire areas containing redundant equipment required for safe shutdown. As part of the corrective actions, the licensee performed testing to determine the qualification of aluminum conduit penetrations, and performed modifications, as appropriate, to restore compliance.

The finding is more than minor because it is associated with the reactor safety Mitigating Systems cornerstone attribute of protection against external factors (i.e., fire) and it affects the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events. Specifically, not having qualification testing results for aluminum conduits that penetrate fire rated barriers adversely affected the fire confinement capability defense-in-depth element because subsequent testing revealed some conduit configurations that did not meet the penetration seal criteria established in Branch Technical Position APCSB 9.5-1. The inspectors used the guidance of NRC Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” and determined that the performance deficiency represented a finding of very low safety significance (Green). Specifically, the fire areas in question either contained a non degraded automatic gaseous or water-based fire suppression system, or the exposed fire areas did not contain potential damage targets that are unique from those in the exposing fire areas. Inspectors determined that no cross cutting aspect was applicable to this performance deficiency because this finding was not indicative of current licensee performance. (Section 4OA5.3)

Inspection Report# : 2011003 *(pdf)*

Significance: Mar 31, 2011
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Correct Multiple Conditions Adverse to Fire Protection
A Green, self-revealing non-cited violation of Condition 3.I to the Surry Unit 1 and Unit 2 Updated Facility Operating Licenses, DPR-32 and DPR-37, was identified for the licensee’s failure to take corrective action for degraded conditions adverse to the fire protection program. The licensee entered this issue into their corrective action program as condition report 398628.

The inspectors found that the failure to take action to correct multiple oversized breakers constituted a performance deficiency. The finding is more than minor because it adversely affected the external factors attribute (fire) of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the Unit 2 ‘1B’ RWST chiller motor and the

Unit ‘2B’ hydrogen recombiner breakers were the most susceptible to fire due to their size; also a cable fault could potentially damage safety related cables routed nearby. In addition, the Unit 1 ‘2B’ charging component cooling water pump is safety related and its cable was also unprotected. The inspectors reviewed IMC 0609, Appendix F, Attachment 1, and determined the category of post fire safe shutdown was affected and the finding required a phase 3 analysis. A phase 3 risk analysis was performed by a regional SRA in accordance with IMC 0609 Appendix F, NUREG/CR6850, NUREG/CR 6850 supplement 1, and utilizing the latest NRC Surry SPAR probabilistic risk analysis model and determined that the risk increase in core damage frequency was <1E-6, a finding of very low risk significance, Green. The cause of this finding involved the cross-cutting area of human performance, the component of work control, and the aspect of work planning, H.3(a), because the licensee failed to appropriately prioritize, schedule, and complete work activities consistent with risk insights and the safety significance of the equipment.

Inspection Report# : 2011002 *(pdf)*

Significance: SL-IV Feb 28, 2011
Identified By: NRC
Item Type: VIO Violation
Inaccurate Fire Watch Records
The licensee identified a violation of 10 CFR 50.48 Fire Protection
requirements when it was determined that a laborer failed to conduct a roving fire watch
patrol. The licensee took substantial disciplinary actions and entered the deficiency into the
corrective action program for resolution as CR 379888.

This issue was dispositioned using traditional enforcement due to the deliberate aspects of
the performance deficiency. Furthermore, the failure to provide complete and accurate
information has the potential to impact the NRC’s ability to perform its regulatory function.
An individual assigned as a fire watch deliberately documented the completion of fire watch
rounds (Fire Watch Tour Documentation Sheet, Attachment 14) for locations in which he did
not conduct the fire watches. This issue was considered more than minor due to the
deliberate aspects of the performance deficiency. In accordance with the guidance in
Supplement VII of the Enforcement Policy, this issue is considered a Severity Level IV
violation because it involved information that the NRC required to be maintained by a
licensee that was incomplete or inaccurate and of more than minor safety significance. No
cross-cutting aspect was identified because this performance deficiency was dispositioned
using traditional enforcement.
Inspection Report# : 2011004 *(pdf)*
Inspection Report# : 2011012 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to classify and declare a Notification of Unusual Event
A Green non-cited violation was identified by the inspectors for the licensee’s failure to classify and declare a Notification of Unusual Event when conditions warranted as required by 10 CFR 50.54(q) and 10 CFR 50.47(b)(4).

The inspectors reviewed IMC0612, Appendix B, and determined that the finding was more than minor because it adversely affected the Emergency Response Organization performance attribute of the Emergency Preparedness cornerstone objective to ensure 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. Since the finding involved a failure to comply with regulatory requirements during an actual event, the inspectors reviewed IMC0609, Appendix B, Sheet 2, and determined that this was a finding of very low safety significance (Green) because it involved the failure to declare a Notification of Unusual Event. The cause of this finding involved the cross-cutting area of human performance, the component of decision making, and the aspect of conservative assumptions and safe actions, H.1(b), because the licensee failed to use conservative assumptions in the decision to not classify and declare the event as an Unusual Event. (Section 4OA3.3)

Inspection Report# : 2011003 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

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.

Miscellaneous

Significance: N/A Jun 24, 2011
Identified By: NRC
Item Type: FIN Finding
PI&R inspection results
The inspection team concluded that, in general, problems were adequately identified, prioritized, and evaluated; and effective corrective actions were implemented. Site management was actively involved in the corrective action program (CAP) and focused appropriate attention on significant plant issues. The team found that employees were encouraged by management to initiate condition reports (CRs) as appropriate to address plant issues.

The licensee was effective at identifying problems and entering them into the CAP for resolution, as evidenced by the relatively few deficiencies identified by the NRC that had not been previously identified by the licensee during the review period. The threshold for initiating CRs was appropriately low, as evidenced by the type of problems identified and large number of CRs entered annually into the CAP. In addition, CRs normally provided complete and accurate characterization of the problem.

Generally, prioritization and evaluation of issues were adequate and consistent with the licensee’s CAP guidance. Formal root cause evaluations for significant problems were adequate, and corrective actions specified for problems did address the cause of the problems. The age and extensions for completing evaluations were closely monitored by plant management, both for high priority condition reports, as well as for adverse conditions of less significant priority. Also, the technical adequacy and depth of evaluations (e.g., root cause investigations) were typically adequate. However, the team identified two minor issues associated with the licensee’s identification of issues and effectiveness of corrective actions.

Corrective actions were generally effective, timely, and commensurate with the safety significance of the issues.

The operating experience program was effective in screening operating experience for applicability to the plant, entering items determined to be applicable into the CAP, and taking adequate corrective actions to address the issues. External and internal operating experience was adequately utilized and considered as part of formal root cause evaluations for supporting the development of lessons learned and corrective actions for CAP issues.

The licensee's audits and self-assessments were critical and effective in identifying issues and entering them into the corrective action program. These audits and assessments identified issues similar to those identified by the NRC with respect to the effectiveness of the CAP.

Based on general discussions with licensee employees during the inspection, targeted interviews with plant personnel, and reviews of selected employee concerns records, the inspectors determined that personnel at the site felt free to raise safety concerns to management and use the CAP as well as the employee concerns program to resolve those concerns.

Inspection Report# : 2011008 *(pdf)*

Last modified : March 02, 2012