



Home > Nuclear Reactors > Operating Reactors > Reactor Oversight Process > Plant Summaries > Browns Ferry 2 > Quarterly Plant Inspection Findings

Browns Ferry 2 – Quarterly Plant Inspection Findings

4Q/2017 – Plant Inspection Findings

On this page:

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness
- Occupational Radiation Safety
- Public Radiation Safety
- Security

Initiating Events

Significance: G Jul 26, 2017

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Implement Corrective Actions to Prevent the Recurrence of a Reactor Scram Due to IRM spiking

A self-revealing non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was reviewed for the licensee's failure to establish measures to assure that corrective action was taken to preclude repetition of a significant condition adverse to quality (SCAQ). The licensee failed to correct electronic noise problems with the scram reset switch which led to a March 29, 2017, reactor scram. As an immediate corrective action, the licensee initiated more rigorous tests to identify noise vulnerabilities on Intermediate Range and Source Range Monitors. The licensee entered this issue into their corrective action program as Condition Report (CR) 1278595.

This performance deficiency was more-than-minor because it is associated with the equipment performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective in that the licensee failed to implement corrective actions to address Intermediate Range Monitor (IRM) spiking following the May 24, 2012, reactor scram. The finding was determined to be Green because it did not involve the loss of mitigation equipment. The inspectors determined that the finding had a cross-cutting aspect of Challenge the Unknown (H.11) within the cross-cutting area of Human Performance because the licensee failed to resolve the unknown noise paths to ensure that scram vulnerabilities were corrected.

Inspection Report# : 2017002 (*pdf*)

Mitigating Systems

Significance: G Jul 26, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Fire Risk Evaluation for Postulated Fires Affecting EECW Strainers

An NRC-identified non-cited violation of 10 CFR 50.48(c) and NFPA 805, Section 2.4.2.4 was identified for the licensee's failure to perform an adequate engineering analysis to determine the effects of fire on the ability to achieve the nuclear safety performance criteria. Specifically, the licensee's fire risk evaluation (FRE) of the effects of fire on the Emergency Equipment Cooling Water (EECW) strainers did not have an adequate basis. As an immediate corrective action, the licensee performed plant-specific analyses to determine the effects of fire on the functionality of EECW strainers and EECW system. The violation was entered into the licensee's corrective action program as CR 1263434.

The performance deficiency was determined to be more-than-minor because it was associated with the protection against external factors attribute of the Mitigating Systems cornerstone and adversely impacted the cornerstone objective in that failure to adequately

3

analyze the effects of fire damaged cables for the EECW strainers and backwash valves impacted the objective of ensuring the reliability of the EECW system during a fire. This finding was determined to be Green because the finding did not affect the ability to reach and maintain a stable plant condition within the first 24 hours of a fire event. The inspectors determined that the finding had a cross-cutting aspect of Avoid Complacency (H.12) within the cross-cutting area of Human Performance because the licensee did not recognize that historical assumptions about long-term strainer functionality could contain mistakes and latent issues during development of the nuclear safety capability analysis.

Inspection Report# : 2017002 (*pdf*)

Significance:  Jul 26, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Non-conservative Assumptions in Emergency Drain Capacity Design Review

****Duplicate** See Internal Flooding**** An NRC-identified non-cited violation of 10 CFR 50, Appendix B, Criterion III was identified for the licensee's failure to verify the adequacy of the Unit 1 and 2 diesel building emergency drain pipe to mitigate a postulated internal flood. Specifically, the licensee's design review contained non-conservative assumptions. As an immediate corrective action, the licensee reevaluated the potential water accumulation and concluded the diesel generators were still protected. The violation was entered into the licensee's corrective action program as CR 1303737.

The performance deficiency was more-than-minor because it was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, non-conservative assumptions in calculation MDQ00004020110008 resulted in inaccurate conclusions about the capacity of the drain and the resulting water accumulation in the building. The finding was determined to be Green because it represented a deficiency affecting the design of the drain piping, but it maintained its functionality. Functionality was preserved because additional evaluation showed that the resulting water accumulation would not affect any safety related equipment. No

cross-cutting aspect was assigned because it was not considered to be reflective of current licensee performance because the performance deficiency occurred more than three years ago.

Inspection Report# : 2017002 (*pdf*)

Significance:  Jul 26, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Assure EECW Design Basis Capability

An NRC-identified non-cited violation of 10 CFR Part 50, Appendix B, Criterion III was identified for the licensee's failure to correctly translate the design basis of the EECW system into technical instruction 0-TI-579(EECW). The effects of instrument uncertainty and diesel frequency variations were not considered when establishing the minimum allowed inservice test low alert pump flow limits. As an immediate corrective action, the licensee evaluated the operability of the EECW pump and initiated corrective action to make changes to the test criteria and/or the system design analysis. The violation was entered into the licensee's corrective action program as CR 1288208.

The performance deficiency was more-than-minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective in that there was a reasonable doubt on the operability of the B3 EECW pump since portions of the adjusted pump curve would be below the minimum pump curve established in the design basis calculation. Additionally, there was a significant reduction in available margin for the pump under design basis conditions. The finding was determined to be Green because the finding was a deficiency affecting the design of a mitigating system, but the pump maintained its operability. The inspectors determined that the finding had a cross-cutting aspect of Human Performance (H.6) within the cross-cutting area of Design Margins because engineers did not demonstrate the characteristic of ensuring that design margins were guarded and changed only through a systematic and rigorous process.

Inspection Report# : 2017002 (*pdf*)

Significance:  Jul 26, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Non Conservative Assumptions in Emergency Drain Capacity Design Review

An NRC-identified non-cited violation of 10 CFR 50, Appendix B, Criterion III was identified for the licensee's failure to verify the adequacy of the Unit 1 and 2 diesel building emergency drain pipe to mitigate a postulated internal flood. Specifically, the licensee's design review contained non-conservative assumptions. As an immediate corrective action, the licensee reevaluated the potential water accumulation and concluded the diesel generators were still protected. The violation was entered into the licensee's corrective action program as CR 1303737.

The performance deficiency was more-than-minor because it was associated with the design control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, non-conservative assumptions in calculation MDQ00004020110008 resulted in inaccurate conclusions about the capacity of the drain and the resulting water accumulation in the building. The finding was determined to be Green because it represented a deficiency affecting the design of the drain piping, but it maintained its functionality. Functionality was preserved because additional evaluation showed that the resulting water accumulation would not affect any safety related equipment. No

cross-cutting aspect was assigned because it was not considered to be reflective of current licensee performance because the performance deficiency occurred more than three years ago.

Inspection Report# : 2017002 (*pdf*)

Barrier Integrity

Significance:  May 10, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Take Corrective Actions to Preclude a Repeat Failure of a Containment Isolation Valve

An NRC identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for the licensee's inadequate corrective actions to preclude repetition (CAPR) of a significant condition adverse to quality (SCAQ). The licensee's failure to take appropriate CAPRs for a SCAQ that resulted in an inoperable RCIC containment isolation check valve was a performance deficiency. The licensee entered the condition into their corrective action plan as CR 1265552, performed repairs to the valve, and initiated a new root cause analysis. This performance deficiency was more than minor, because it was associated with the configuration control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective because the misalignment of the stem to disc for 2-CKV-71-14 resulted in a loss of reliability. The finding screened as Green because the RCIC subsystem remained operable. The finding was not assigned a crosscutting aspect because the cause was not related to current licensee performance.

Inspection Report# : 2017001 (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Unauthorized Entry into a High Radiation Area

. A self-revealing non-cited violation (NCV) of TS 5.7.1 was identified for a worker who entered a High Radiation Area (HRA) (Unit 1 reactor building steam tunnel) without proper authorization. This performance deficiency was determined to be greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Human Performance and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The inspectors determined the finding to be of very low safety significance (Green). The licensee entered the issue into their Corrective Action Program (CAP) as Condition Report (CR) 1219539, and took immediate corrective actions including restricting Radiologically Controlled Area (RCA) access for the individuals involved and performing confirmatory surveys of the area. This finding involved the cross-cutting aspect of Human Performance, Teamwork, [H.4], because a significant contributor to this event was poor communication between different work groups (workers entering the reactor building steam tunnel and RP personnel at the control)

Inspection Report# : 2017001 (*pdf*)

Significance:  Mar 31, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform Airborne Radioactivity Surveys

An inspector-identified non-cited violation (NCV) of TS 5.4.1 was identified for the licensee's failure to obtain an air

sample while performing work in an area with smearable contamination levels greater than 50,000 disintegrations per minute (DPM) per 100cm². This performance deficiency was determined to be greater than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of Human Performance and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The inspectors determined the finding to be of very low safety significance (Green). The licensee entered the issue into their CAP (CR 1219539) and, since the work created airborne radioactivity in the area, performed in-vivo monitoring on the affected workers to assess doses from the intake of radioactive material. This finding involved the cross-cutting aspect of Human Performance, Avoid Complacency, [H.12], because, considering the contamination levels present, RP staff underestimated the risk for potential airborne radioactive material in the area

Inspection Report# : 2017001 (*pdf*)

Public Radiation Safety Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : February 01, 2018

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