U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Davis-Besse – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

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Initiating Events

Significance: G Dec 31, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Mispositioned Instrument Air Valves Result in Plant Transient
A self-revealed finding of very low safety significance was identified for the licensee's failure to appropriately follow station procedures for aligning instrument air valves that support main feedwater (MFW) regulating valve operation. Specifically, two instrument air valves were not aligned to their normal operating position following planned maintenance. As a result, the Steam Generator 2 (SG 1-2) MFW Regulating Valve momentarily closed during routine steam feedwater rupture control system (SFRCS) surveillance testing and caused a plant transient. Corrective actions taken by the licensee, include but are not limited to, performance of an instrument air valve line up to validate no other valves were out of position; performance of SFRCS Actuation Channel 2 testing to verify no other half trips existed on SFRCS Actuation Channel 2 components; a configuration control stand-down with the instrument and control shop; and revisions to procedural guidance to perform additional valve position verification.
The finding was of more than minor significance because it was associated with cornerstone attribute of configuration control and adversely affected the cornerstone objective: "To limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations." The finding was determined to be of very low safety significance because the finding did not cause a reactor scram with the loss of mitigation equipment relied upon to transition the plant from the onset of the scram to a stable shutdown condition (e.g. loss of condenser, loss of feedwater). The inspectors determined that the finding had a cross-cutting aspect in the area of human performance. The inspectors assigned the cross-cutting aspect of "Avoid Complacency" to the finding because the procedural step to close valve IA1008A was marked as complete but was not performed correctly. Additionally, appropriate human performance error reduction tools were not adequately used to ensure valve manipulations were performed as intended. (H.12)

Inspection Report# : 2016004 *(pdf)*

Significance: G Dec 31, 2016
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Adequately Evaluate Degraded Turbine Building Roof Vents
A finding of very low safety significance was self-revealed on September 10, 2016, when rainwater intrusion into the automatic voltage regulator caused a generator lockout and reactor trip. Specifically, station management failed to adequately assess the identified degraded condition of the turbine building roof vents in accordance with station expectations and procedures when four roof vents were left stuck open although it was identified by operators that water intrusion was possible onto the stator water cooling skid and automatic voltage regulator on August 17th, 24 days prior to the event. No violation of regulatory requirements was identified because the turbine building roof vents and automatic voltage regulator are not safety related, and the applicable maintenance procedures were not covered under Title 10 of the Code of Federal Regulations (10 CFR) 50, Appendix B.
The finding was of more than minor safety significance because it affected the Equipment Reliability attribute of the Initiating Events cornerstone. Specifically, the failure to fully evaluate the risk associated with the stuck open turbine building roof vents affected the availability and reliability of the automatic voltage regulator causing a reactor trip. The inspectors also reviewed the examples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," dated August 11, 2009, and found no similar examples. The finding was determined to be a licensee performance deficiency of very low safety significance because the performance deficiency did not cause a reactor trip with the loss of mitigating equipment. The inspectors determined this finding affected the cross-cutting area of problem identification and resolution and the cross-cutting aspect of evaluation. The licensee did not properly evaluate the problem and assigned an incorrect priority to the work order to address the degraded roof vents. (P.2)

Inspection Report# : 2016004 *(pdf)*

Mitigating Systems

Significance: G May 17, 2017
Identified By: NRC
Item Type: FIN Finding
Failure to Maintain Adequate Room Temperature in the Emergency Feedwater Facility
A finding of very low safety significance was identified by the inspectors for failing to maintain adequate room temperature in the emergency feedwater facility (EFWF) to support equipment operation. Specifically, the inspectors identified temperatures below freezing in multiple locations on emergency feedwater (EFW) system piping and in the EFWF basement. In response, the licensee installed heaters to raise room temperature.
This finding is not a violation of NRC requirements. The inspectors determined that failing to maintain adequate room temperature in the EFWF to support equipment was contrary to Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide", Rev. 2 and was a performance deficiency. The finding is of more than minor significance because it was associated with the cornerstone attribute of protection against external factors and adversely affected the mitigating systems cornerstone objective. A detailed risk evaluation (DTE) determined the finding was (Green). This finding was assigned a cross-cutting of "Challenge the Unknown". (H.11) (Section 4OA5.1.c.1)

Inspection Report# : 2017008 *(pdf)*

Significance: G Mar 31, 2017
Identified By: NRC
Item Type: VIO Violation
Failure to Establish a Test Program that Demonstrates the Emergency Core Cooling System Room Coolers Will Perform Satisfactorily in Service
The inspectors identified a finding of very low safety significance (Green) and an associated Cited Violation of Title 10 of the Code of Federal Regulations, (10 CFR) Part 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to establish a test program that demonstrates the emergency core cooling system (ECCS) room coolers will perform satisfactorily in service. Specifically, the associated inspection procedures did not include acceptance criteria, and the inspection results were not documented and evaluated to demonstrate the ECCS room coolers' thermal performance was acceptable. The licensee captured this issue in their corrective action program (CAP) as condition report (CR) 2017-03328 to, in part, restore compliance and assess current and past operability.
The performance deficiency was determined to be more than-minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Specifically, the failure to demonstrate the ECCS room coolers will perform satisfactorily in service does not ensure the coolers would remain available and capable of performing their mitigating function because it has the potential to allow an unacceptable condition to go undetected. The finding screened as of very-low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee re-evaluated the past operability impact of the 2016 tube blockage discoveries and determined that coolers were operable by crediting actual service water temperature and flowrate conditions. The inspectors determined that the associated finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. (Section 1R07.b(1)) [P.2]

Inspection Report# : 2017001 *(pdf)*

Significance: G Dec 01, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Fire Hazards Analysis Report Incorrectly Described Rooms 511 and 512 as being Continuously Staffed
The inspectors identified a finding of very-low safety significance (Green), and associated Non-Cited Violation of License Condition 2.C.(4) for the licensee's failure to implement and maintain the Fire Protection Program as described in the Updated Final Safety Analysis Report. Specifically, the current Fire Hazards Analysis Report incorrectly listed rooms 511 and 512 as not requiring a separate fire watch, for fire protection impairments, because the rooms were incorrectly assumed to be continuously staffed or visible to the continuously staffed area. The licensee entered this issue into their Corrective Action Program and updated the Fire Hazards Analysis Report to reflect the current operating practice and deleted rooms 511 and 512 from the list of rooms that were continuously staffed.
The inspectors determined that the performance deficiency was more-than-minor because if left uncorrected, it could become a more significant safety concern for the failure to maintain the defense-in-depth element for the Fire Protection Program. The lack of fire watches degraded the ability to recognize conditions which could either increase the likelihood of a fire or the severity of a fire. The finding was representative of a low degradation and screened as having very low safety significance (Green) in Task 1.3.1 of IMC 0609, Appendix F. The finding did not have a cross-cutting aspect associated with it because it was not reflective of current performance. (Section 1R05.10b)
Inspection Report# : 2016009 *(pdf)*

Significance: G Sep 30, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Inadequate Instructions to Correctly Assemble Electrical Conductor Seal Assemblies
A self-revealed finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," were identified for the licensee's failure to provide adequate instructions to correctly assemble electrical conductor seal assemblies (ECSAs) used to provide an environmental barrier for resistance temperature detectors (RTDs). Specifically, the midlock ferrules inside two ECSAs were installed backwards during the 18th refueling outage (RFO) in 2014 which rendered multiple post accident monitoring system (PAMS) indications required by Technical Specification (TS) 3.3.17 inoperable. This issue was entered into the licensee's corrective action program (CAP). Corrective actions by the licensee included, but were not limited to, replacement of the two dual element RTDs impacted and their associated ECSAs during the 2016 RFO, performance of an extent of condition review, development of enhanced procedural guidance, and implementation of additional training on ECSA components.
This finding was of more than minor significance because it was associated with the cornerstone attribute of equipment performance, and adversely affected the cornerstone objective: "To ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage)." The inspectors determined the finding to be of very low safety significance because it did not represent a deficiency affecting design or qualification of a mitigating system, structure, and component (SSC); it did not represent a loss of system and/or function; it did not represent an actual loss of function for at least a single train for more than its TS allowed outage time; and it did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program. The inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, the cross-cutting aspect of "Training" was assigned to the finding because a job task analysis was performed prior to the 2014 RFO and determined that the procedural guidance to correctly assemble the ECSAs was adequate; thus no training or procedural changes were required. But the as-found condition of the RTDs during the 2016 RFO identified that a knowledge gap and procedure deficiency existed. (H.9)

Inspection Report# : 2016003 *(pdf)*

Significance: G Sep 30, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Inadequate Modification Design Control Measures Result in Reactor Protection System Inoperability
A self-revealed finding of very low safety significance and an associated NCV of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control," were identified for the licensee's failure to have adequately prepared and implemented a permanent plant modification associated with steam generator (SG) replacement during the unit's 18th RFO in 2014. Specifically, in conjunction with SG replacement the licensee had also replaced a significant amount of reactor coolant system (RCS) piping and instrumentation, including all RCS hot leg resistance temperature detectors (RTDs). The RTD housings were improperly insulated during the modification, such that over the ensuing reactor operating cycle the RTD wiring insulation degraded to the extent that nearly all the RTDs were rendered inoperable. This issue was entered into the licensee's CAP. Corrective actions by the licensee included replacement of the degraded RTDs.
This finding was of more than minor safety significance because it affected the attribute of design control of the Mitigating Systems cornerstone of reactor safety, and adversely impacted the cornerstone objective of ensuring the availability, reliability, and capability of the unit's RPS. Specifically, the inspectors determined that the licensee's failure to have properly designed and implemented the insulation packages for the RTD housings ultimately resulted in

the overheating and degradation of the RTD wiring insulation and inoperability of the RTDs associated with the RCS high temperature and RCS pressure/temperature reactor trips. The finding was determined to be of very low safety significance based on a detailed risk analysis that yielded a change in core damage frequency (CDF) of less than 1E-7 events per year. The inspectors determined that the finding had a cross cutting aspect in the area of human performance. The inspectors assigned the cross cutting aspect of "Field Presence" to the finding because the licensee's SG replacement project management team failed to reinforce the importance of close communication between responsible engineers with overlapping and interfacing modification packages, and did not adequately promote effective work execution through the use of clearly defined work documents that were written and structured to minimize the likelihood for human error. (H.2)

Inspection Report# : 2016003 *(pdf)*

Barrier Integrity

Significance: G Oct 01, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
10 CFR 50.59 Evaluation Failed to Consider Change to Seismic Licensing Basis
A finding of very-low safety significance and an associated NCV of Title 10 of the Code of Federal Regulations (CFR), Part 50.59(b)(1), "Changes, Tests, and Experiments," (effective January 1, 1991) was identified by the inspector for the licensee's failure to maintain records that included a written safety evaluation which provided the bases for determining that the change to seismic licensing basis damping in calculations to support removal of snubbers under modification 90-0079 did not involve an unreviewed safety question. Specifically, licensee safety evaluation SE91-0046 did not provide a suitable basis for concluding that there was no increase in the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report, in that it did not address how the basis for the NRC's-approval of the seismic design of the reactor coolant system continued to be met with respect to the steam generator slider support (Lubrite plate) damping. In particular, a May 31, 1983, NRC Safety Evaluation Report approved the licensee's use of 0.15g safe shutdown earthquake ground acceleration in its seismic analysis for reactor coolant system design, in part, because "there is sufficient conservatism and margin in the piping systems components and supports at Davis-Besse Unit 1 to ensure safe shutdown and continued shutdown heat removal in the event of a safe shutdown earthquake having a ground acceleration of 0.20g." The licensee subsequently adopted a significantly higher damping value for the steam generator slider support while maintaining a 0.15g acceleration for the design without addressing how "sufficient conservatism and margin" otherwise continued to be met. The licensee entered this issue into its corrective action program.
The inspector determined that the licensee's failure to provide in its 10 CFR 50.59 evaluation, SE91-0046, a suitable basis for the determination that the use of damping higher than established in the seismic licensing basis for the reactor coolant system, specifically the steam generator slider support, was not an unreviewed safety question was a performance deficiency. The issue of concern was determined to be more than minor because the performance deficiency impacted the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers (reactor coolant system) protect the public from radionuclide releases caused by accidents or events and the design control attribute to maintain functionality of the reactor coolant system. The inspector evaluated the underlying technical issue using IMC 0609, "The Significance Determination Process for Findings at Power," Appendix A, Exhibit 1, "Initiating Events Screening Questions." The inspector answered "No" to all the questions in Exhibit 1. In particular, because the reactor coolant system remained operable (capable of performing its safety function during a seismic event), the finding was determined to have very-low safety significance (Green) corresponding to a Severity Level IV violation per Example 6.1.d.2 of the NRC Enforcement Policy. The inspector did not identify a cross-cutting aspect associated with the finding because the finding was not representative of current performance. (Section 4OA5.1).
Inspection Report# : 2016010 *(pdf)*

Emergency Preparedness
Occupational Radiation Safety
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 : August 03, 2017

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