La Salle 2
2Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform Adequate Evaluation for Reactor Building Crane Upgrade
During an inspection of pre-operational testing activities of an independent spent fuel storage installation (ISFSI) at the LaSalle County Station, the inspectors identified a finding of very low safety significance with an associated NCV of Part 10 of the Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, “Design Control,” for the 2 Enclosure licensee’s failure to perform adequate evaluations to upgrade the single failure proof crane. Specifically, the inspectors identified five examples where the licensee failed to perform adequate evaluations in accordance with American Society of Mechanical Engineers (ASME) NOG-1-2004, “Rules for Construction of Overhead and Gantry Cranes (Top Running and Bridge, Multiple Girder),” requirements. The reactor building crane was designed to meet Seismic Category I requirements, and the licensee used compliance with ASME NOG-1-2004 as the design basis for their crane upgrade to a single failure proof crane. The inspectors determined that the failure to perform adequate evaluations was contrary to ASME NOG-1-2004 requirements and was a performance deficiency. The licensee documented the conditions in Issue Report (IR) 957014, IR 1093028, and IR 1098435 and initiated actions for calculation revisions and field modifications.

The finding was of more than minor significance because it was associated with the Initiating Events Cornerstone attribute of Equipment Performance and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure to perform adequate evaluations affected the licensee’s ability to provide reasonable assurance that loads would not be dropped during critical lifts. The inspectors evaluated the finding using IMC 0609.04, “Phase 1 - Initial Screening and Characterization of Findings,” and based on a “No” answer to all of the questions in the Initiating Events column of Table 4a, determined the finding to be of very low safety significance (Green). This finding has a cross-cutting aspect in the area of Human Performance, Work Practices because the licensee did not ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported (IMC 0310, H.4(c)). (Section 4OA5)
Inspection Report# : 2010005 *(pdf)*

Mitigating Systems

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Post Protected Pathway Signs for a Red Risk Path System
A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4), Maintenance Rule, was identified by inspectors for the licensee’s failure to implement all necessary prescribed risk management actions during a Unit 2 Reactor Core Isolation Cooling (RCIC) system maintenance window. Specifically, the licensee failed to post protected equipment signs for the Unit 2 systems whose unavailability would have taken the unit into a Red risk condition. The licensee entered this issue into their corrective action program (CAP).

The inspectors determined that this performance deficiency is a finding and greater than minor because the licensee failed to implement prescribed compensatory measures of posting signs and barricades to protect the high pressure core spray (HPCS) equipment during the RCIC work window, hence degrading the HPCS safety function during this

time; which is similar to Example 7.g in IMC 0612, Appendix E. The inspectors performed a Phase 1 screening with assistance from the Regional Senior Reactor Analyst (SRA) using IMC 0609, Appendix K, “Maintenance Risk Assessment and Risk Management Significance Determination Process,” Flowchart 2, “Assessment of Risk Management Actions.” The calculated change in Incremental Core Damage Probability (ICDP), or actual increase in risk during this work window, was 5.7x10-9, and the incremental large early release probability (ILERP), was 3.3x10-10. In accordance with Flowchart 2, since the ICDP was less than 1x10-6 and the ILERP was less than 1x10-7, the finding screened as Green. This finding has a cross-cutting aspect in the area of Human Performance, Work Practices, because the licensee failed to conduct first and second verifications and use independent peer checks or other human error prevention techniques when evaluating risk-significant and/or Technical Specification (TS)-related activities, which led to the missed postings for the protected pathway equipment (H.4(a)).
Inspection Report# : 2011002 *(pdf)*

Significance: G Jan 03, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Supporting Structure for Standby Liquid Control System Test Tank Non-Functional During Postulated Design Basis Earthquake (DBE).
The team identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to have an adequate calculation to demonstrate the seismic qualification of the standby liquid control (SBLC) system test tanks. Specifically, the licensee could not ensure that the Units 1 and 2 SBLC test tanks, if filled with water, would not collapse and damage nearby safety-related components during a design basis event. The licensee entered this finding into their corrective action program and drained the water from the SBLC test tanks to restore seismic qualification.

The team determined that this finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability of the SBLC system to respond to initiating events to prevent undesirable consequences (i.e., core damage). This finding was determined to be of very low safety significance (Green) utilizing the Risk-Assessment Standardization Project Handbook based on the frequency of seismic events. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R21.3.b.(1))
Inspection Report# : 2010006 *(pdf)*

Significance: G Jan 03, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
EDG Usable Fuel and RHR Pump NPSH Calculations Failed to Consider Appropriate EDG Frequency Variations
The team identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control” for the licensee’s failure to account for allowable frequency variations on the emergency diesel generators (EDG) in the diesel fuel oil consumption and residual heat removal (RHR) pump net positive suction head (NPSH) calculations. Specifically, the team noted the calculations assumed a frequency of 60 Hz whereas the Technical Specifications (TS) allowed steady state operation at a frequency of up to 61.2 Hz. The licensee entered this finding into their corrective action program and implemented a standing order and procedural limitations to ensure an adequate supply of fuel was available.

The team determined that this finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the EDGs to respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, operating the EDGs at a frequency of 61.2 Hz would result in higher fuel consumption and reduced RHR pump NPSH margins. The finding is of very low safety significance (Green) because it did not result in a loss of operability. This finding had a cross-cutting aspect in the area of problem identification and resolution, operating experience because the licensee did not properly evaluate relevant operating experience. (P.2(a)) (Section 1R21.3.b.(2))
Inspection Report# : 2010006 *(pdf)*

Significance: G Jan 03, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Insufficient Design Bases for Degraded Voltage Time Delay and LOV Relay Settings
The team identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," involving the licensee's failure to have appropriate analyses for the loss of voltage relay setpoints and the second level undervoltage [degraded voltage] relay timer settings. Specifically, licensee's analysis and technical basis for the auxiliary power system (AP) second level undervoltage relay time delay settings failed to demonstrate the ability of the permanently connected safety-related loads to continue to operate during the 5.5 minutes relay time delay without sustaining damage during a worst case, non-accident degraded voltage condition (when voltage was still above the setpoint of the loss of voltage relay setpoint). The licensee entered this finding into their corrective action program to verify the adequacy of the degraded voltage relay setpoint and time delay design.

The team determined that this finding was more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, there was reasonable doubt as to whether the permanently connected safety-related loads would remain operable during a worst case, non-accident degraded voltage condition for the duration of the time delay chosen for the degraded voltage relay. The finding was of very low safety significance (Green) since the existing settings for the inverse time relay currently being used for the loss of voltage relay would limit the duration of degraded voltage below 75 percent to only a few seconds. This finding had a cross-cutting aspect in the area of problem identification and resolution because similar concerns raised at the Byron Nuclear Station, during the 2009 CDBI, were not promptly evaluated and correctly dispositioned at LaSalle. [P1(c)] (Section 1R21.3.b.(3))
Inspection Report# : 2010006 *(pdf)*

Significance: G Jan 03, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Fast Transfer Scheme
The team identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," involving the licensee's failure to analyze the capability of the electrical system to transfer safety related 4160V buses as described in the Updated Final Safety Analysis Report (UFSAR). The licensee entered this finding into their corrective action program and issued a standing order restricting alignment of safety buses to the unit auxiliary transformer (UAT) pending resolution of this issue.

The team determined that this finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance (Green) since the safety buses had not been aligned to the UAT, the team determined the finding design deficiency did not result in loss of operability or functionality. The team did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance. (Section 1R21.3.b.(4))
Inspection Report# : 2010006 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to follow the performance centered monitoring process specified in procedure MA-AA-716-210
A finding of very low safety significance (Green) and an associated NCV of Technical Specification (TS) 5.4.1, "Procedures", was self-revealed, for the failure to follow procedural guidance specified in procedure MA-AA-716-210, "Performance Centered Monitoring Process." Specifically, a control relay for the Unit 2
Division 3 switchgear room ventilation was inappropriately classified for its preventive maintenance schedule and had a recommended replacement frequency of 'as required' instead of the 10 year frequency required, by procedure, for this type of equipment. As a result, when this relay failed, it caused the switchgear room ventilation system (VD) to

trip and the unexpected unavailability and inoperability of the Unit 2 high pressure core spray (HPCS) system.

The inspectors determined that the finding was of more than minor significance because it affected the Mitigating Systems Cornerstone attribute of Human Performance (human error pre-event), and it affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, since HPCS is a single train, this constituted a loss of safety function. The finding was determined to be of very low safety significance using an SDP Phase 3 analysis. As part of the corrective actions for this issue, the licensee re-classified the control relay to Critical, high duty cycle, to help ensure that replacement of the component occurs at the appropriate time-based frequency. The inspectors did not identify a cross-cutting aspect associated with this finding. (Section 4OA3)
Inspection Report# : 2010005 *(pdf)*

Barrier Integrity

Significance:  Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Plant Barrier Control Process Caused Secondary Containment to Become Inoperable
A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified by the inspectors for the licensee's failure to follow steps 3.6 and 3.7 of procedure CC-AA-201, Revision 8, "Plant Barrier Control Program." Specifically, two airlock doors were opened simultaneously for a period of time sufficient to allow reactor building air pressure to surpass the TS allowed value for operability of secondary containment. The licensee entered this issue into its CAP as action requests (ARs) 1182255 and 1195987, and, at the time of this report, was in the process of conducting an apparent cause evaluation to determine the causes of the occurrence and to develop corrective actions.

The finding was determined to be more than minor because it was associated with the Barrier Integrity Cornerstone attribute of configuration control and affected the cornerstone objective of providing reasonable assurance that physical design barriers (secondary containment) protect the public from radionuclide releases caused by accidents or events. The inspectors performed a Phase 1 SDP review of this finding
using the guidance provided in IMC 0609, and a Region III SRA continued the risk assessment using IMC 0609, Appendix H, "Containment Integrity Significance Determination Process." For Unit 1, since an open pathway existed to the environment from the secondary containment, the SRA performed a Phase 2 SDP analysis using the Appendix H guidance. For Unit 2, the SRA performed a Phase 1 SDP analysis using
Figure 6.2, "Road Map for LERF [Large Early Release Frequency]-based Risk Significance Evaluation for Type B Findings at Shutdown." The SRA concluded that the total risk associated with this finding is very low and best characterized as Green. This finding has a cross-cutting aspect in the area of Human Performance, Work Control, because the licensee did not appropriately coordinate work activities by incorporating
actions to address the impact of the work on different job activities, and the need for work groups to communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance (H.3(b)).
Inspection Report# : 2011002 *(pdf)*

Emergency Preparedness

Significance: SL-IV Jun 22, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Aproval.
The inspector identified a voilation of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the

plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance. (1EP4)

The associated performance deficiency is tracked as item 2011-503-02.
Inspection Report# : 2010503 *(pdf)*

Significance: G Jun 22, 2011
Identified By: NRC
Item Type: FIN Finding
Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval.
The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the 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. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

The associated traditional enforcement item is tracked as item 2011-503-01.
Inspection Report# : 2010503 *(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: SL-IV Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Make a Required 10 CFR 50.72 report for an Inoperable Secondary Containment
A Severity Level IV NCV of 10 CFR 50.72(b)(3)(v) was identified by the inspectors for the licensee's failure to report an event or condition that could have prevented the fulfillment of the secondary containment's safety functions, which are relied upon to control the release of radioactive material. Specifically, the licensee had not properly controlled the opening of two airlock doors that served as a boundary to maintain the ventilation envelope of the reactor building. The licensee entered this issue into its CAP as ARs 1182255 and 1195987, and, at the time of this report, was in the process of conducting an apparent cause evaluation to determine the causes of the occurrence and to develop corrective actions.

Violations of 10 CFR 50.72 are considered to be violations that potentially impact the regulatory process and are dispositioned using the traditional enforcement process instead of the Reactor Oversight Process SDP. As such, a cross-cutting aspect was not assigned to this violation.
Inspection Report# : 2011002 *(pdf)*

Significance: SL-IV Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Design the ISFSI Pad to Adequately Support the Static and Dynamic Loads of Stored Casks
The inspectors identified an NCV of 10 CFR 72.212 (b)(2)(i)(B), "Conditions of a General License Issued Under 72.210," for the licensee's failure to perform adequate evaluations of the ISFSI pad. Specifically, the inspectors identified five examples where the licensee failed to design the ISFSI pad to adequately support the static and dynamic loads of the stored casks, considering potential amplification of earthquakes through soil-structure interaction. The licensee documented the conditions in IRs 900610, 966506 and 1102633. As an interim corrective action, the licensee provided a technical paper containing justification for partial loading of the pad with 10 casks.

Because this violation was related to an ISFSI license, it was dispositioned using the traditional enforcement process in accordance with Section 2.2 of the Enforcement Policy. The inspectors determined that the eficiency was of more than minor significance because, if left uncorrected, a failure of the ISFSI pad could lead to a more significant safety concern. The inspectors determined that the violation could be screened using section 6.5.d.1 of the NRC Enforcement Policy as a Severity Level IV Violation. (Section 4OA5)
Inspection Report# : 2010005 *(pdf)*

Significance: SL-IV Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform adequate evaluations to ensure compliance with 10 CFR 72.212(b)(3) and 10 CFR 72.122 (b)(2)(i)
The inspectors identified an NCV of 10 CFR 72.146, "Design Control," for the licensee's failure to perform adequate evaluations to ensure compliance with 10 CFR 72.212(b)(3) and 10 CFR 72.122 (b)(2)(i). Specifically, the inspectors identified that the licensee failed to evaluate that the reactor site parameters including analyses of 3 Enclosure tornado effects were enveloped by the cask design basis, and perform additional analysis to ensure compliance with 10 CFR 72.122(b)(2)(i). The licensee documented the condition in IR 1137279 and initiated a new calculation to demonstrate compliance.

Because this violation was related to an ISFSI license, it was dispositioned using the traditional enforcement process in accordance with Section 2.2 of the Enforcement Policy. The violation was determined to be of more than minor significance because the licensee failed to have an evaluation to assure transfer cask (HI-TRAC) integrity during a tornado event and an additional calculation was required. The licensee's new calculation determined that overturning and sliding of the HI-TRAC on the refuel floor would not occur during a tornado. Therefore, the violation screened as having very low safety significance (Severity Level IV). (Section 4OA5)

Inspection Report# : 2010005 *(pdf)*

Last modified : October 14, 2011