

La Salle 1

1Q/2006 Plant Inspection Findings

Initiating Events

W**Significance:** Jun 30, 2005

Identified By: Licensee

Item Type: VIO Violation

Failure to Maintain Required Design Redundancy Against a Single Failure Involving Safety-Related 4160 Vac Division 1 and Division 2 Bus Metering Circuitry.

An apparent violation having a preliminary low to moderate safety significance was identified during the licensee's review of a similar issue identified at Crystal River Nuclear Plant Unit 3 on January 27, 2005. A design deficiency in a metering circuit for the site's normal 4160 volts-alternating current (Vac) offsite power supply induced a vulnerability whereby a single fault in the metering circuitry, for a given unit, could have resulted in the loss of all Division 1 and Division 2 safety-related 4160 Vac power on a given unit.

The finding was determined to be greater than minor because it impacted both the Initiating Events and Mitigating Systems Cornerstones. The finding was preliminarily determined to be of low to moderate safety significance following the performance of a case-specific Phase 3 SDP. Corrective actions taken by the licensee included installing temporary modifications on each unit to remove the metering circuitry in question.

On 9/7/2005, a final significance determination (WHITE) letter and NOV were transmitted to the licensee for this issue (ADAMS ML052500698). The finding was determined to constitute an Old Design Issue, as discussed in the NRC Enforcement Policy, and enforcement discretion was exercised.

Based on the results of the supplemental inspection completed on January 5, 2006, the inspector determined that the licensee performed a comprehensive root cause evaluation and implemented appropriate corrective actions to identify and address the root and contributing causes associated with the single point vulnerability of the 4160 volts AC system common metering circuit.

Inspection Report# : [2005010\(pdf\)](#)Inspection Report# : [2006002\(pdf\)](#)Inspection Report# : [2006003\(pdf\)](#)**G****Significance:** Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Implement Fire Protection Procedure Requirements for Hot Work and Ignition Control Issues.

A finding of very low safety significance was identified by an NRC inspector conducting a routine observation of licensee maintenance activities associated with the removal and replacement of containment isolation check valve 1E51-F028. An associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was also identified.

The performance deficiency identified by the inspectors involved inadequate ignition controls for the hot work being performed on the valve. The finding was of more than minor significance in that it had a direct impact on the cornerstone objective. Specifically, the licensee's performance deficiencies allowed sparks from the work to reach an uncovered safety-related cable tray in the vicinity of the work location. Because the safety-related cable tray in question contained only cables associated with the Unit 1 reactor core isolation cooling system (RCIC), which was inoperable, unavailable, and within the allowed outage time permitted by plant Technical Specifications at the time of the finding, and because all the cables in the tray were qualified to IEEE-383-1974, "Institute of Electrical and Electronic Engineers (IEEE) Standards for Type Test of Class 1E Electric Cables, Field Splices and Connections for Nuclear Generation Stations," for flame retardation, the inspectors determined the finding to have been of very low safety significance (Green) and within the licensee's response band. Corrective actions planned and completed by the licensee included: revocation of hot work fire watch qualifications for all station mechanics; assignment of the station's Fire Marshal to provide direct oversight of remaining 1E51-F028 hot work activities once they resumed; and new and revised hot work training for all mechanical maintenance personnel prior to their recertification for the performance of hot work activity. The finding was determined to involve the cross-cutting aspect of problem identification and resolution.

Inspection Report# : [2005003\(pdf\)](#)**G****Significance:** Jun 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Operators Fail to Note and Respond to Unit 1 Overpower Condition in a Timely Manner

A finding of very low safety significance was self-revealed when Unit 1 reactor power inadvertently rose to approximately 103.17 percent on February 23, 2005, and went unnoted by the on-watch control room crew for several minutes. A Non-Cited Violation of Condition 2.C (1) of

NRC Facility Operating License No. NPF-11 for LaSalle County Station, Unit 1, was also identified.

The performance deficiency for this finding involved the collective distraction of on-watch control room personnel that removed crew focus from their primary duty of monitoring reactor and plant parameters. The finding was of more than minor significance in that it had a direct impact on 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." Because the finding only affected the probability of a reactor trip and no mitigating systems were impacted, it was determined to have been of very low safety significance (Green) and within the licensee's response band.

Corrective actions taken by the licensee in response to the event included: maintaining the reactor recirculation flow control valves in manual, pending the results of investigation into possible faults with the recirculation flow controllers; immediate relief of the on-watch Unit 1 control room crew; changing several plant process computer alarms (MWth, MWe, and reactor pressure) from low-level alarms, which annunciate only briefly and then are automatically silenced, to higher level alarms that require operator action to silence the alarm tones; and establishment of robust physical barriers around the recirculation flow control switches to preclude them from being inadvertently bumped. The finding was determined to have involved the cross-cutting aspect of human performance.

Inspection Report# : [2005003\(pdf\)](#)

Mitigating Systems

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Significance: Sep 02, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Procedures Fail To Ensure Fire Doors Are Operable

A finding of very low safety significance was identified by the inspectors for a violation of Technical Specification 5.4.1(c) requirements. The licensee failed to establish written procedures that contained direction for ensuring that fire doors (i.e., fire-rated barriers) were closed and latched. Specifically, the inspectors found an inoperable fire door in which the latching pins were not extended into the door frame. The licensee's daily fire door surveillance failed to include direction for ensuring that the latching pins in the inactive door leaf in a set of double doors were extended into the door frame. Once identified, the licensee entered the finding into their corrective action program as Issue Report 00363677 to revise the affected procedure.

The finding was more than minor because the potential existed for fire doors to have been inoperable without established compensatory measures. Also, two instances of inoperable fire doors were found as a result of the performance deficiency. An inoperable fire barrier could have allowed the propagation of fire from one fire area to another that contained redundant safe shutdown equipment. The finding was of very low safety significance because the two fire areas that were separated by the inoperable fire doors did not contain redundant equipment important for safe shutdown. (Section 1R05.9b)

Inspection Report# : [2005006\(pdf\)](#)

Significance: SL-IV Jul 15, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform 10 CFR 50.59 Evaluation for an Adverse Change to the UFSAR

A finding of very low safety significance was identified by the inspectors associated with a Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," where the licensee failed to complete a full evaluation in accordance with 10 CFR 50.59 for an adverse change to the nitrogen supply header description in the updated final safety analysis report. This issue was entered into the licensee's corrective action system.

This finding was more than minor because the screening was adverse and there was insufficient information to reasonably conclude that prior NRC approval was not necessary. This finding was categorized as Severity Level IV because the underlying technical issue for the finding was determined to be of very low safety significance using the Phase 1 worksheet.

Inspection Report# : [2005008\(pdf\)](#)

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Significance: Jul 15, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Design Basis for Simultaneous Energization of Both Battery Chargers

A finding of very low safety significance was identified by the inspectors associated with a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," where the licensee failed to maintain an accurate design basis supporting the addition of loads on the safety-related buses, due to the simultaneous energization of both battery chargers. This issue was entered into the licensee's corrective action system and the licensee performed a preliminary analysis which showed that the safety-related buses would not be overloaded with both chargers energized simultaneously.

This finding was more than minor because it affected an attribute of the mitigating systems cornerstone. Specifically, the licensee could not

initially demonstrate that the design basis of the plant was not affected by adding the additional battery charger load. This finding was of very low safety significance because it screened out using the Phase 1 worksheet.

Inspection Report# : [2005008\(pdf\)](#)

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Significance: Jul 15, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Water Leg Pump Room Heatup Calculation

A finding of very low safety significance was identified by the inspectors associated with a Non-Cited Violation of 10 CFR 50.63, "Loss of All Alternating Current Power." Specifically, LaSalle County Station failed to maintain an accurate design basis heat-up calculation that supported the heat loads that would be present during a station blackout event for the water leg pump room. This issue was entered into the licensee's corrective action system and the licensee performed a preliminary analysis which showed that the temperatures in the water leg pump room were within previously analyzed limits.

This finding was more than minor because it affected an attribute of the mitigating systems cornerstone. Specifically, the licensee had not maintained design control over the maximum heatup temperature in the water leg pump room which are necessary for coping with a station blackout. This finding was of very low safety significance because it screened out using the Phase 1 worksheet.

Inspection Report# : [2005008\(pdf\)](#)

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Significance: Jul 15, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Setpoint Calculation Associated with the RCIC Turbine Exhaust Pressure Trip

A finding of very low safety significance was identified by the inspectors associated with a Non-Cited Violation of 10 CFR 50.63, "Loss of All Alternating Current Power." Specifically, LaSalle County Station did not have an appropriate analysis to determine the capability of coping with a station blackout in that it had no design basis document that verified the proper operation of the reactor core isolation cooling (RCIC) turbine exhaust pressure trip during station blackout conditions. This issue was entered into the licensee's corrective action system and the licensee obtained additional information and performed a preliminary analysis which showed that the pressure trip would operate as required.

This finding was more than minor because it affected an attribute of the mitigating systems cornerstone. Specifically, the licensee had insufficient design control methods in place to demonstrate the operability or reliability of the RCIC turbine exhaust pressure trip during a station blackout. This finding was of very low safety significance because it screened out using the Phase 1 worksheet.

Inspection Report# : [2005008\(pdf\)](#)

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Significance: Jul 15, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Temperature Qualifications for RCIC Electronic Governor Modules

A finding of very low safety significance was identified by the inspectors associated with a Non-Cited Violation of 10 CFR 50.63, "Loss of All Alternating Current Power." Specifically, LaSalle County Station had RCIC room station blackout temperature profiles that exceeded the limiting temperature for the skid-mounted RCIC electronic governor module (EGM). This issue was entered into the licensee's corrective action system and the licensee performed a preliminary analysis which lowered the maximum temperature in the RCIC room. Additionally, the licensee performed testing on the EGM to show that it could operate within the expected temperatures for the required duration.

This finding was more than minor because it affected an attribute of the mitigating systems cornerstone. Specifically, the licensee had not maintained control of its design such that the capability of the RCIC EGM was invalid. This finding was of very low safety significance because it screened out using the Phase 1 worksheet.

Inspection Report# : [2005008\(pdf\)](#)

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Significance: Jul 15, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate NPSH for the RCIC Pump

A finding of very low safety significance was identified by the inspectors associated with a Non-Cited Violation of 10 CFR 50.63, "Loss of All Alternating Current Power." Specifically, the licensee did not have an accurate analysis to show that the RCIC pump had sufficient net positive suction head (NPSH) to operate under station blackout conditions. This issue was entered into the licensee's corrective action system and the licensee performed a preliminary analysis which showed that there was sufficient NPSH during station blackout conditions.

This finding was more than minor because it affected an attribute of the mitigating systems cornerstone. Specifically, the licensee failed to demonstrate that there was sufficient NPSH available to ensure the operability and reliability of the RCIC pump under station blackout conditions. This finding was of very low safety significance because it screened out using the Phase 1 worksheet.

Inspection Report# : [2005008\(pdf\)](#)

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Significance: Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Ineffective Corrective Actions for Water Intrusion into Safety-Related Fan Control Cabinets

A finding of very low safety significance was identified by inspectors, who determined that the licensee failed to take timely and effective corrective action for water intruding into safety-related electrical junction boxes and control cabinets via electrical conduit from the outside. An associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was also identified.

The inspectors determined that the performance deficiency associated with this issue centered around the licensee's failure to give proper priority to the issue and the actions needed to resolve it. The inspectors determined that the finding was of more than minor significance in that it had a direct impact on the Mitigating Systems cornerstone objective. Because the finding did not represent the loss of any safety function for any system or train, and because it was determined not to be potentially significant with respect to any external events such as seismic, flooding, tornado, etc., the inspectors determined it to be of very low safety significance (Green) and within the licensee's response band. Corrective actions taken or planned by the licensee include: a complete extent-of-condition review of all through roof conduits that may be susceptible to water intrusion; drilling of weep holes in all susceptible junction boxes; repairs to damage caused by water intrusion; and the sealing of the leaking conduit on Unit 1, Division 1 and Division 2 safety-related ventilation systems. The finding was determined to involve the cross-cutting area of identification and resolution of problems.

Inspection Report# : [2005003\(pdf\)](#)

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Significance: Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Nonconservative Uncorrected Bias Associated with Tank Level Instruments Used for Standby Liquid Control System Surveillances

The inspectors identified a finding of very low safety significance. During a review of test procedures used to maintain standby liquid control (SBLC) tank volume and concentration within Technical Specification limits, the inspectors identified that the licensee had used inaccurate and nonconservative instruments to measure SBLC tank level. An associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," was also identified.

The inspector-identified performance deficiency associated with this issue was a failure by the licensee's staff to utilize adequate test equipment for the performance of safety-related Technical Specification surveillance measurements of SBLC solution tank level. The inspectors determined that the finding was of more than minor significance in that it had a direct impact on the Mitigating Systems cornerstone objective. The finding was determined to be of very low safety significance because subsequent licensee analyses of SBLC tank concentrations and volumes, in accordance with GL 91-18, demonstrated that the errors in SBLC tank volume in question were sufficiently small as to not have jeopardized the capability of SBLC to have performed its safety function for either unit. Corrective actions by the licensee included: additions of sodium pentaborate chemical to each unit's SBLC tank to adjust chemistry to well within the Technical Specification required band; revision of SBLC tank sampling procedures; and the establishment of administrative controls to ensure that each unit's SBLC tank volume and sodium pentaborate solution concentration are being maintained well away from Technical Specification limits; and the procurement of new T-squares instruments for measuring SBLC tank level, which were manufactured in accordance with 10 CFR 50, Appendix B, Quality Assurance Program controls and requirements.

Inspection Report# : [2005003\(pdf\)](#)

Barrier Integrity

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Significance: Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Establish and Maintain Written Procedures and Instructions for the Technical Specification Administrative Control of Primary Containment Isolation Valve 1E51-F069

Inspectors identified a finding of very low safety significance for the lack of written procedures and instructions related to the Technical Specification administrative control of a primary containment isolation valve (PCIV). An associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, was also identified.

The finding was determined to be more than minor in that it directly affected the configuration control and procedure quality attributes of the Barrier Integrity cornerstone (containment) and affected the cornerstone objective of providing reasonable assurance that physical design barriers (i.e., containment) protect the public from radionuclide releases caused by accidents or events. Because the finding did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, reactor building, or the standby gas treatment

(SBGT) system, and did not represent a degradation of the smoke or toxic gas barrier function for the control room, and did not represent an actual open pathway in the physical integrity of the primary containment or involve an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of the primary containment, the inspectors determined it to be of very low safety significance (Green) and within the licensee's response band. The licensee had entered this issue into their corrective action program as Issue Report (IR) 475214. Corrective actions planned by the licensee included development of a formal process for using administrative controls to meet Technical Specification requirements.

Inspection Report# : [2006003\(pdf\)](#)

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Significance: Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform Effective Corrective Action on Degraded/Nonconforming Unit 1 RCIC F028 Containment Isolation Check Valve

The inspectors identified a finding of very low safety significance and an associated NCV during a review of the maintenance and performance history surrounding the 1E51-F028 reactor core isolation cooling (RCIC) containment isolation check valve. The licensee failed to effectively diagnose and correct a recurring performance problem with the valve sticking open following a failed local leak rate test (LLRT) on September 10, 2004. This failure to effectively diagnose and correct a degraded and nonconforming condition was determined to constitute a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action."

The performance deficiency with this issue was a failure on the part of the licensee to have properly diagnosed the 1E51-F028 degraded condition and to have effectively enacted repairs in September 2004. The finding was of more than minor significance in that it had a direct impact on this cornerstone objective. Specifically, the licensee's failure to properly diagnose and effectively correct a degraded condition with the 1E51-F028 containment isolation check valve resulted in a subsequent failure on April 7, 2005, which occurred with the unit operating at power in a condition where the valve was required to be operable. Because the finding did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, reactor building, or the standby gas treatment (SBGT) system, and did not represent a degradation of the smoke or toxic gas barrier function for the control room, and did not represent an actual open pathway in the physical integrity of the primary containment or involve an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of the primary containment, it was determined to be of very low safety significance. The finding was determined to involve the cross-cutting aspect of problem identification and resolution.

Inspection Report# : [2005004\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

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Significance: Mar 31, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Instrument Maintenance Technician Enters a High Radiation Area on the Wrong RWP

A finding of very low safety significance was self-revealed as a result of an alarm on a worker's electronic dosimeter. The issue was identified when an instrument maintenance technician logged onto the wrong radiation work permit (RWP) and entered the assigned work area in the radiologically controlled area (RCA), Unit 1 Division 1 residual heat removal (RHR) room, a posted high radiation area (HRA). The primary cause of this finding was related to human performance. The technician failed to verify that he/she was on the correct RWP for the assigned work.

The finding was more than minor because the occurrence involved an individual worker's potential unplanned, unintended dose resulting from actions or conditions contrary to licensee procedures, and could be reasonably viewed as a precursor to a more significant event. The finding was determined to be of very low safety significance because the finding did not involve an as low as reasonably achievable (ALARA) issue, as collective dose was not an issue and the individual's radiation exposure was low relative to regulatory limits; there was not a substantial potential for a worker overexposure; and the licensee's ability to assess worker dose was not compromised. The finding was a Non-Cited Violation of Technical Specification 5.4.1.a., which requires the licensee to establish, implement and maintain procedures recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Corrective actions planned by the licensee included increased management oversight during RWP log in and issuance of a site communication regarding the event.

Inspection Report# : [2006003\(pdf\)](#)

Public Radiation Safety

G**Significance:** Sep 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Obtain Evidence of Quality Furnished by a Contractor Resulting in Violation of the Certificate of Compliance for a Cask During a Shipment of Failed Fuel

The inspectors identified a finding and associated NCV of 10 CFR 71.12 (currently § 71.17) for the failure to comply with the Certificate of Compliance (CoC) for a Type B shipping cask. During preparation of the NAC International Legal Weight Truck (NAC-LWT) cask for shipment of failed fuel pins, the licensee followed the procedures provided by the contractor when placing a previously unused inner cask liner into service. However, the licensee did not ensure that the components of the shipping cask, including the liner, had been qualified for use in accordance with the CoC. As a result, during the loading process free water was entrained in the liner and was not detected until the cask and liner were opened upon receipt of the package. The finding was entered into the licensee's corrective action program.

The issue was more than minor because it was associated with the Plant Facilities/Equipment and Instruments attribute of the Public Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials. The issue represents a finding of very low safety significance because it did not involve exceeding a radiation limit nor was there a breach of the package during transit. A Non-Cited Violation of general license granted by 10 CFR 71.12 (currently § 71.17) was identified for the failure to obtain objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products on delivery. Corrective actions following the identification of the problem include development of a governing procedure to address corporate, station, and vendor roles and responsibilities as well as other shipping considerations (e.g., reporting requirements, use of qualified package) prior to future irradiated fuel shipments).

Inspection Report# : [2005004\(pdf\)](#)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

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