

Prairie Island 1

3Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO TEST CHECK VALVE SI-9-5 UNDER SUITABLE ENVIRONMENTAL CONDITIONS

Green. An inspector identified finding of very low safety significance and a Non Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, due to the licensee's failure to ensure Check Valve SI-9 5 was tested under suitable environmental conditions. Specifically, the licensee preconditioned SI 9 5 prior to testing by increasing reactor pressure and tapping on the valve with a hammer.

The inspectors determined that this finding was more than minor because it was associated with the equipment performance attribute of the initiating events cornerstone. The finding affected the cornerstone objective of limiting the frequency of those events that upset plant stability and challenge critical safety functions. The inspectors concluded that the finding was of very low safety significance because it was not a primary system loss of coolant accident or transient initiator. Additionally, the finding did not screen as potentially risk significant due to a fire, seismic, flooding, or severe weather initiating event. The inspectors concluded that this finding affected the corrective action program component of the Problem Identification and Resolution cross cutting area because the licensee failed to evaluate the cause of the 2008 SI 9 5 valve test failures to ensure that the resolution addressed the cause and extent of condition (P.1(c)). The corrective actions for this issue included restoring the valve to an operable but degraded condition, providing training on preconditioning, providing training on the use and implementation of the operability determination process, and improving the thorough evaluation of equipment related deficiencies.

Inspection Report# : [2008003](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

LOAD SEQUENCER TEST PROCEDURE CONFLICTS WITH VENDOR MANUAL INFORMATION

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V for the failure to ensure that the surveillance procedures used to test the safety related load sequencers included appropriate qualitative acceptance criteria. Specifically, the acceptance criteria specified in the procedure conflicted with vendor manual information and was less conservative. Corrective actions for this issue included revising the surveillance procedures to include the vendor manual information and implementing a comprehensive preventive maintenance program to improve the availability and reliability of the load sequencers.

This finding was more than minor because it was associated with the procedure quality and equipment performance attributes of the Mitigating Systems Cornerstone. In addition, the finding affected the cornerstone objective of ensuring the availability and reliability of equipment to respond to initiating events to prevent undesirable consequences. The inspectors determined that this finding was of very low safety significance because it was not a design issue resulting in loss of operability or functionality, it did not result in a loss of safety function, it did not result in loss of safety function for a single train for greater than the allowed outage time, and it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that this finding was cross cutting in the Human Performance, Decision Making area because the licensee failed to use conservative assumptions during the February 2007 decision that led to making the load sequencer surveillance procedure non-conservative (H.1(b)).

Inspection Report# : [2008004](#) (*pdf*)

Significance: TBD Sep 30, 2008

Identified By: NRC

Item Type: AV Apparent Violation

11 TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP INOPERABLE DUE TO IMPROPERLY INSTALLED INSULATION

The inspectors identified an apparent violation (AV) of Technical Specification 5.4.1 for the failure to establish, implement and maintain procedures governing the installation of insulation on the 11 turbine-driven auxiliary feedwater (TDAFW) pump. The failure to establish and implement adequate instructions resulted in the 11 TDAFW pump being inoperable for 10 days due to improper insulation installation during the March 2008, Unit 1 refueling outage. This issue has the potential to have low to moderate safety significance; however, this may change pending the completion of the SDP. Corrective actions for this issue included correctly installing the insulation, exploring the installation of a different insulation package that was easier to install, and performing an internal inspection to determine if mechanical clearances inside the

turbine were contributing to the increased turbine bearing temperatures.

This finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 11 TDADF pump would not have been able to perform its safety function during the worst case, post accident conditions. This finding was not an immediate safety concern because the licensee took immediate action to declare the pump inoperable once the condition of the insulation was identified. The inspectors determined that this finding was cross cutting with respect to the Decision Making aspect of the Human Performance area because the licensee failed to use conservative assumptions when determining the need to establish and implement instructions for installing the turbine insulation (H.1(b)).

Inspection Report# : [2008004](#) (*pdf*)

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Significance: Jul 09, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

This is a security Related Finding - see inspection report for details.

This finding, affecting the Mitigating Systems Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information": therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance - Facilities & Equipment. See inspection report for more details.

Inspection Report# : [2008006](#) (*pdf*)

Significance: SL-IV Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

USAR NOT UPDATED TO INCLUDE ANALYSES

Severity Level IV. The inspectors identified a Non-Cited Violation of 10 CFR 50.71, "Maintenance of records, making of reports," for the licensee's failure to adequately update the Prairie Island Nuclear Generating Plant Updated Safety Analysis Report (USAR) to include analyses performed in response to Generic Letter (GL) 2004-02. Title 10 CFR 50.71(e) requires, in part, that the USAR be revised to include the effects of all analyses of new safety issues performed by or on behalf of the licensee at Commission request. The Commission, through GL 2004-02, requested that licensees perform an evaluation of the Emergency Core Cooling Systems and its associated recirculation functions and, if appropriate, take additional actions to ensure system function. The licensee, in response to GL 2004-02, performed analyses of debris generation and transport, chemical effects, downstream effects, upstream effects, and strainer and other structural analysis, but did not update the safety analysis report to include those analyses.

This issue potentially impacted the NRC's ability to perform its regulatory function and therefore, it was evaluated using the traditional enforcement process. The inspectors determined that the finding was more than minor because of the potential to impact the regulatory process by using IMC 0612, Appendix B, "Issue Screening," dated September 20, 2007. Specifically, the failure to provide complete licensing and design basis information in the USAR could result in either the licensee making an inappropriate interpretation or the NRC making an inappropriate regulatory decision based on incomplete information in the USAR. This finding has a cross-cutting aspect in the area of human performance, work practices (H.4(c)) because the licensee did not ensure supervisory and management oversight of work activities such that nuclear safety was supported. Corrective actions included revising the USAR to reflect the analyses and submitting the updated information to the NRC.

Inspection Report# : [2008003](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

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Significance: Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MAINTAIN STAFF RESPIRATORY QUALIFICATIONS INCLUDING PERSONNEL QUALIFICATIONS NECESSARY FOR EMERGENCY RESPONSE DUTIES AS REQUIRED BY STATION PROCEDURES

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50.54(q) for the failure to maintain staff respiratory qualifications, including personnel qualifications necessary for emergency response duties, as required by station procedures. Specifically, the inspectors identified multiple instances over the last several years where station personnel, including those required to

maintain their respiratory readiness necessary for emergency response functions, failed to maintain their qualifications current. The most recent instances being a fire brigade member standing duty without the necessary respiratory fit test and a reactor operator standing duty without the necessary respiratory protection training. Planned corrective actions included periodic reviews to identify respiratory protection qualification issues prior to expiration to ensure that impacted departments maintained compliance with station procedures until the next scheduled periodic review.

The issue was more than minor because it was chronic in nature and associated with the facilities/equipment attribute of the Emergency Preparedness Cornerstone. The inspectors determined that the issue affected the cornerstone objective to ensure adequate protection of plant emergency workers (and consequently the health and safety of the public in the event of a radiological emergency) should the workers be called upon to use the equipment. Since the finding did not represent a functional failure of the Planning Standard, and the workers who were required to use respiratory protective equipment were not qualified and/or trained to use that equipment, the finding was determined to be of very low safety significance (Green). The inspectors determined that this finding was cross-cutting in the area of Problem Identification and Resolution because the licensee failed to take appropriate corrective actions once the issue was identified (P.1(d)).

Inspection Report# : [2008004](#) (pdf)

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

TSC VENTILATION ISSUES RESULTED IN INADEQUATE EMERGENCY RESPONSE FACILITY

Green. The inspectors identified a NCV of 10 CFR 50.54(q), associated with 10 CFR 50.47(b)(8), for failing to maintain adequate emergency facilities to support emergency response. Specifically, the licensee failed to maintain control of the Technical Support Center ventilation system. As a result, the system was frequently found to be in a degraded condition that may not have provided adequate protection for emergency response personnel.

This finding was more than minor because it was associated with the attribute of meeting the planning standards of 10 CFR 50.47(b). In addition, the finding affected the cornerstone objective of ensuring that the licensee was capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. In accordance with the SDP Phase 1 Screening Worksheet of IMC 0609, the inspectors applied Appendix B, "Emergency Preparedness Significance Determination Process," Section 4.8 and determined that this issue was of very low safety significance. Specifically, the Technical Support Center ventilation system was degraded for a period of longer than seven days from the time of original discovery. In addition, the degradation was to the extent that key emergency response organization members may not have been able to perform their assigned plan functions without compensatory measures. The finding was determined to be cross cutting in the corrective action program aspect of the Problem Identification and Resolution cross-cutting area because the licensee failed to thoroughly evaluate repeated problems with the Technical Support Center ventilation system such that the causes of the problems were identified and addressed (P.1(c)).

Inspection Report# : [2008002](#) (pdf)

Occupational Radiation Safety

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

WORKER NOT IN COMPLIANCE WITH TS 5.7.1 B RECEIVED AN ED DOSE-RATE ALARM WHEN HE INAPPROPRIATELY ENTERED A HRA OF THE PLANT DURING STEAM GENERATOR SET-UP WORK

Green. A self-revealing finding of very low safety significance and an associated NCV were identified for the licensee's failure to comply with Technical Specification 5.7.1.b for access control to high radiation areas of the plant. As a result of poor human performance, a contract radiation worker received an electronic dosimeter high dose-rate alarm while performing steam generator set-up activities, when he inappropriately entered a high radiation area of the plant on a non-high radiation area radiation work permit. As corrective actions, the licensee provided additional training to the individuals involved and reinforced the expectations for high radiation area access control.

The finding was more than minor because it was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and potentially affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation, in that the failure to implement controls for high radiation area entry may result in unplanned dose. The finding was determined to be of very low safety significance because the finding did not involve As-Low-As-Is-Reasonably-Achievable (ALARA) planning; it did not involve an overexposure; there was not a substantial potential for a worker overexposure; and the licensee's ability to assess worker dose was not compromised. The cause of the finding is related to a cross-cutting aspect of human performance in work control (H.3(b)).

Inspection Report# : [2008002](#) (pdf)

G**Significance:** Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE IMPLEMENTATION OF VHRA CONTROLS FOR THE C-SUMP IN U1R24

Green. A finding of very low safety significance and an associated Non-Cited Violation (NCV) was inspector-identified for the licensee=s failure to adequately maintain sufficient controls over a posted very high radiation area (VHRA) during the spring 2006 Unit-1 refuel outage (U1R24) contrary to 10 CFR 20.1602 and station procedural requirements. Specifically, the licensee failed to maintain appropriate control of the C-sump (i.e., the thimble tube chase). The licensee has entered the issue into the corrective action program. Licensee corrective actions included reinforcing expectations for procedural compliance and revising the procedures to require the written permission of the plant manager for VHRA key issue.

The finding was more than minor because it was associated with the Program/Process attribute of the Occupational Radiation Safety cornerstone and potentially affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation. The finding was determined to be of very low safety significance because the finding did not involve As-Low-As-Is-Reasonably-Achievable (ALARA) planning, collective dose was not a factor, it did not involve an overexposure, there was not a substantial potential for a worker overexposure, and the licensee=s ability to assess worker dose was not compromised. The cause of the finding is related to a cross-cutting aspect in the area of Human Performance associated with the aspect of work practices in procedural compliance (H.4.b).

Inspection Report# : [2007005](#) (*pdf*)**G****Significance:** Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE CONTROL OF VHRA KEYS IN U2R24

Green. A finding of very low safety significance and an associated NCV of Technical Specification 5.4.1 was inspector-identified for the licensee=s failure to adequately implement radiation safety procedures concerning the 2006 Unit-2 refueling outage when the C-sump VHRA key was signed out by radiation protection (RP) supervision and possession of the key was transferred between individuals over multiple shifts. The licensee has entered the issue into the corrective action program. Licensee corrective actions for this issue included reinforcing expectations for procedural compliance and revising the procedures to ensure that the VHRA keys are maintained in the control of RP supervision, that possession is not transferred between personnel, and that VHRA keys are checked back in at the end of each shift.

The finding was more than minor because it was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and potentially affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation. The finding was determined to be of very low safety significance because the finding did not involve ALARA planning, collective dose was not a factor, it did not involve an overexposure, there was not a substantial potential for a worker overexposure, and the licensee=s ability to assess worker dose was not compromised. . The cause of the finding is related to the cross-cutting area of Problem Identification and Resolution associated with the aspect of corrective action program specifically that the licensee takes appropriate corrective actions to address safety issues, commensurate with their significance (P.1.d).

Inspection Report# : [2007005](#) (*pdf*)

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

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