



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

October 30, 2009

Mr. Christopher L. Burton  
Vice President  
Carolina Power & Light Company  
Shearon Harris Nuclear Plant  
P.O. Box 165, Mail Zone 1  
New Hill, NC 27562-0165

**SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT – NRC PROBLEM  
IDENTIFICATION AND RESOLUTION INSPECTION  
REPORT 05000400/2009006**

Dear Mr. Burton:

On October 2, 2009, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Shearon Harris reactor facility. The enclosed report documents the inspection findings, which were discussed on October 2, 2009, and October 26, 2009, with you and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, compliance with the Commission's rules and regulations, and with the conditions of your operating license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of plant equipment and activities, and interviews with personnel.

On the basis of the samples selected for review, the team concluded that in general, problems were properly identified, evaluated, and resolved within the problem identification and resolution program. However, during the inspection, some examples of minor issues were identified in the areas of identification of issues, prioritization and evaluation of issues, and effectiveness of corrective actions. This report documents two NRC identified findings that were evaluated under the significance determination process as having very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations consistent with Section VI.A.1 of the NRC Enforcement Policy. If you wish to contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at the Shearon Harris Nuclear Plant.

In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the Shearon Harris Power Plant. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Daniel Merzke, Acting Chief  
Reactor Projects Branch 7  
Division of Reactor Projects

Docket Nos. 50-400  
License Nos. DPR-63

Enclosure: Inspection Report 05000400/2009006  
w/Attachment: Supplemental Information

cc w/encl. (See page 3)

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Sincerely,

**/RA/**

Daniel Merzke, Acting Chief  
 Reactor Projects Branch 7  
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cc w/encl. (continued page 4)

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cc w/encl. (continued)  
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Letter to Christopher L. Burton from Daniel Merzke dated October 30, 2009.

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT – NRC PROBLEM  
IDENTIFICATION AND RESOLUTION INSPECTION REPORT  
05000400/2009006

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-400

License Nos.: DPR-63

Report No: 05000400/2009006

Licensee: Carolina Power and Light Company (CP&L)

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road  
New Hill, NC 27562

Dates: September 14 - 18, 2009  
September 28 - October 2, 2009

Inspectors: M. Catts, Resident Inspector, Palo Verde, Team Leader  
P. Lessard, Resident Inspector, Harris  
P. Niebaum, Resident Inspector, Hatch  
R. Taylor, Senior Project Inspector  
E. Stamm, Project Engineer

Approved by: Daniel Merzke, Acting Chief  
Reactor Projects Branch 7  
Division of Reactor Projects

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## SUMMARY OF FINDINGS

IR 05000400/2009006; 09/14/2009 – 10/02/2009; Shearon Harris Nuclear Power Plant, Unit 1; biennial inspection of the identification and resolution of problems.

The inspection was conducted by a senior project inspector, three resident inspectors, and a project engineer. Two Green findings of very low safety significance were identified during the inspection. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspects were determined using Inspection Manual Chapter 0305, "Operating Reactor Assessment Program." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management's review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### Identification and Resolution of Problems

The inspection team concluded that, in general, problems were adequately identified, prioritized, and evaluated; and effective corrective actions were implemented. Site management was actively involved in the corrective action program and focused appropriate attention on significant plant issues. The team found that employees were encouraged by management to initiate corrective action documents to address plant issues.

The licensee generally had an adequate threshold for identifying and correcting problems, as evidenced by the relatively few deficiencies identified by the NRC that had not been previously identified by the licensee during the review period. Action requests normally provided complete and accurate characterization of the problem. However, the team identified a minor violation and seven minor issues during plant walkdowns and document reviews where problems were not identified and entered into the corrective action program by the licensee.

Generally, prioritization and evaluation of issues were adequate, consistent with the licensee's corrective action program guidance. Formal root cause evaluations for significant problems were adequate, and corrective actions specified for problems addressed the cause of the problems. The age and extensions for completing evaluations were closely monitored by plant management, both for high priority nuclear condition reports, as well as for adverse conditions of lower priority. Also, the technical adequacy and depth of evaluations (e.g., root cause investigations) were typically adequate. However, the team identified one unresolved item and two minor issues associated with prioritization and evaluation of issues.

Corrective actions were generally timely, commensurate with the safety significance of the issues, and effective, in that conditions adverse to quality were corrected in accordance with the licensee CAP procedures. For the significant conditions adverse to quality that were reviewed, generally the corrective actions directly addressed the cause and effectively prevented recurrence, as evidenced by a review of performance indicators, nuclear condition reports, and discussions with licensee staff that demonstrated that the significant conditions adverse to quality had not recurred. Effectiveness reviews for corrective actions to prevent recurrence were scheduled consistent with licensee procedures. However, during the review of nuclear

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condition reports, the team identified two violations of NRC requirements and an additional minor issue regarding adequacy and timeliness of corrective actions.

The operating experience program was effective in screening operating experience for applicability to the plant, entering items determined to be applicable into the corrective action program, and taking adequate corrective actions to address the issues. External and internal operating experience were adequately utilized and considered as part of formal root cause evaluations for supporting the development of lessons learned and corrective actions.

The licensee's audits and self-assessments were critical and effective in identifying issues and entering them into the corrective action program. These audits and assessments identified issues similar to those identified by the NRC with respect to the effectiveness of the corrective action program.

Based on general discussions with licensee employees during the inspection, targeted interviews with plant personnel, and reviews of selected employee concerns records, the team determined that personnel at the site felt free to raise safety concerns to management and use the corrective action program as well as the employee concerns program to resolve those concerns.

#### A. NRC Identified Findings

##### Cornerstone: Barrier Integrity

- Green. The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify the cause and take corrective actions to preclude repetition of a significant condition adverse to quality for both containment spray additive system eductors being outside of the technical specification flow band. Specifically, between July 2009 and the present, the violation occurred when Eductor A was found three times and Eductor B was found once outside of the Technical Specification 3.6.2.2 flow band. This issue was previously identified as a significant condition adverse to quality in January 2008, but the corrective actions taken failed to preclude repetition. The licensee entered this issue into the corrective action program as nuclear condition report 356873. The licensee took immediate corrective actions to throttle the eductor flow to within the band, and is developing corrective actions to preclude repetition.

The finding is more than minor because it is associated with the design control attribute of the Barrier Integrity Cornerstone and affects the cornerstone objective of providing reasonable assurance that physical design barriers, such as the iodine scrubbing capability of the containment spray additive system eductors, will protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because it did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, or spent fuel pool; the finding did not represent a degradation of the barrier function of the

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control room against smoke or a toxic atmosphere; the finding did not represent an actual open pathway in the physical integrity of reactor containment; and the finding did not involve an actual reduction in function of the hydrogen igniters in the reactor containment. The finding had a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary, and for significant problems, conduct effectiveness reviews of corrective actions to ensure that the problems are resolved (P.1(c)) (Section 4OA2.a(3)(i)).

- Green. The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct a condition adverse to quality in a timely manner. Specifically, between May 27, 1997 and September 29, 2007, Main Steam Isolation Valve 82 close stroke time exhibited a condition adverse to quality for a trend degrading towards the technical specification limit, without sufficient corrective actions to prevent failure. This resulted in Main Steam Isolation Valve 82 exceeding the five-second stroke time limit required in Technical Specification 3.7.1.5. The licensee entered this issue into the corrective action program as nuclear condition report 358464.

This finding is more than minor because it is associated with the containment barrier performance attribute of the Barrier Integrity Cornerstone and affects the cornerstone objective of providing reasonable assurance that physical design barriers, such as the main steam isolation valve radiological release barrier required for a steam generator tube rupture, protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because it did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, or spent fuel pool; the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere; the finding did not represent an actual open pathway in the physical integrity of reactor containment; and the finding did not involve an actual reduction in function of the hydrogen igniters in the reactor containment. This finding had a cross-cutting aspect in the area of human performance associated with decision-making because the licensee did not use conservative assumptions so that safety-significant decisions were verified to validate underlying assumptions and identify unintended consequences (H.1.(b)) (Section 4OA2.a(3)(ii)).

B. Licensee Identified Violations

None

## REPORT DETAILS

### 4. OTHER ACTIVITIES

#### 4OA2 Problem Identification and Resolution

##### a. Assessment of the Corrective Action Program

##### (1) Inspection Scope

The inspectors reviewed the licensee's corrective action program (CAP) procedures which described the administrative process for initiating and resolving problems primarily through the use of action requests (ARs), which were then processed into the CAP as nuclear condition reports (NCRs). The team selected and reviewed a sample of NCRs that had been issued between August 2007 and August 2009. This period of time was purposefully chosen to follow the last Biennial Problem Identification and Resolution (PI&R) inspection conducted in August 2007. This review was performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP for resolution. Where possible, the team independently verified that the corrective actions were implemented as intended.

Within the time frame described above, the team selected NCRs from principally four specific areas of interest. The first inspection area consisted of a detailed review of selected NCRs associated with four risk-significant systems: emergency AC power (non-emergency diesel generator (EDG)), essential services chilled water, containment isolation Target Rock valves, and low head safety injection (LHSI) / residual heat removal (RHR) system. The team conducted plant walkdowns of equipment associated with the selected systems and other plant areas to assess the material condition and to look for any deficiencies that had not been previously entered into the CAP. The team reviewed NCRs, maintenance history, completed work orders (WOs) for the systems, and reviewed associated system health reports. These reviews were performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP for resolution. Items reviewed generally covered a two-year period of time; however, in accordance with the inspection procedure, the team performed a five-year review of age-dependent issues for containment isolation Target Rock valves and LHSI/RHR.

The second inspection area consisted of a detailed review of a representative number of NCRs that were assigned to the major plant departments, including operations, maintenance, engineering, health physics, chemistry, emergency preparedness, and security. This selection was performed to ensure that samples were reviewed across all cornerstones of safety identified in the NRC's Reactor Oversight Process (ROP). These NCRs were reviewed to assess each department's threshold for identifying and documenting plant problems, thoroughness of evaluations, and adequacy of corrective actions. The team also attended meetings where NCRs were screened for significance

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to determine whether the licensee was identifying, accurately characterizing, and entering problems into the CAP at an appropriate threshold.

For the third inspection area, the team selected a sample of NRC issued non-cited violations and findings, licensee identified violations, and Licensee Event Reports (LERs), to verify the effectiveness of the licensee's CAP implementation regarding NRC inspection findings and reportable events issued since the previous 2007 PI&R inspection.

The fourth inspection area covered the review of NCRs associated with selected issues of interest, specifically maintenance rule functional failures, non-conforming/degraded conditions, and radiation monitors performance issues. The team reviewed the NCRs to verify that problems were identified, evaluated, and resolved in accordance with the licensee's procedures and applicable NRC Regulations.

Among the four areas mentioned above, the team conducted a detailed review of selected root-cause and apparent-cause evaluations of the problems identified. The team reviewed these evaluations against the descriptions of the problem described in the NCRs and the guidance in licensee Procedure CAP-NGGC-0205, "Significant Adverse Condition Investigations and Adverse Condition Investigations-Increased Rigor." The team assessed if the licensee had adequately determined the cause(s) of identified problems, and had adequately addressed operability, reportability, common cause, generic concerns, extent-of-condition, and extent-of-cause. The review also assessed if the licensee had appropriately identified and prioritized corrective actions to prevent recurrence.

Additionally, the team performed control room walkdowns to assess the main control room (MCR) deficiency list and to ascertain if deficiencies were entered into the CAP. Operator workarounds and operator burden screenings were reviewed, and the team verified compensatory measures for deficient equipment which were being implemented in the field.

Finally, the team reviewed site trend reports, to determine if the licensee effectively trended identified issues and initiated appropriate corrective actions when adverse trends were identified. The team attended various plant meetings to observe management oversight and implementing functions of the corrective action process. These included Management Review of NCRs meetings and Unit Evaluators' meetings.

Documents reviewed are listed in the Attachment.

(2) Assessment

Identification of Issues

The team determined that the licensee generally had an adequate threshold for identifying and correcting problems as evidenced by: the relatively few deficiencies identified by the NRC that had not been previously identified by the licensee during the review period; the type of problems identified and corrected; the review of licensee

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requirements for initiating corrective action documents as described in licensee Procedure CAP-NGGC-0200, "Corrective Action;" the management expectation that employees were encouraged to initiate NCRs or work orders; a review of system health reports; and the team's observations during plant walkdowns. However, the team identified a minor violation and seven minor issues during plant walkdowns and document reviews where problems were not identified and entered into the CAP by the licensee. Trending was generally effective in monitoring and identifying plant issues; however, the team determined that not enough time had passed to assess trends or for the licensee to develop goals and thresholds for the newly developed performance indicators, such as corrective maintenance backlog or preventative maintenance deferred. Site management was actively involved in the CAP and focused appropriate attention on significant plant issues.

The team identified the following minor violation:

- 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," states, in part, that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures. It further states that test results shall be documented and evaluated to assure that test requirements have been satisfied. Contrary to the above, on September 30, 2009, the team identified data recorded per Procedure MST-I0412, "Waste Processing Building (WPB) Stack 5 Flow Rate Monitor and Isokinetic Sampling System Calibration dated August 20, 2009," was outside the allowable range and was not discovered prior to returning the WPB Vent Stack 5 Flow Rate Monitor and the associated Wide Range Gas Monitor (WRGM) to service. Upon discovery, the licensee declared the WRGM inoperable and initiated appropriate compensatory actions pending a subsequent performance of calibration Procedure MST-I0412. This failure to comply with 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," constitutes a violation of minor significance that is not subject to enforcement action in accordance with the NRC's Enforcement Policy. This issue is similar to NRC's Inspection Manual Chapter 0612, Appendix E, Example 1(a), in that the data was incorrectly recorded during the procedure and there was reasonable assurance that the Flow Stack Monitor and the associated WRGM remained operable as evidenced by a successful retest per licensee Procedure MST-I0412. The licensee entered this issue into the CAP as NCR 358187.

The team identified the following minor issues:

- The team identified a potential adverse trend in maintenance induced voiding of safety-related systems. Specifically, voids had been introduced during maintenance on an emergency service water (ESW) pump, a normal service water pump, a containment spray pump, and an auxiliary feedwater pump. No operability issues exist for these pumps. The licensee entered this issue into the CAP as NCR 356943.
- Nuclear Condition Report 357122 was written to address refrigerant/oil leakage on Essential Services Chiller B. Per Procedure CAP-NGGC-0200, this NCR should

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have been routed to the MCR so the licensee could appropriately explore any impact upon operability. The licensee identified that the NCR had not been properly routed to the MCR and took corrective action. However, the licensee failed to identify that the NCR not being properly routed to the MCR was an adverse condition. Following discussions with the inspection team, the licensee concluded that not routing the NCR to the MCR was an adverse condition and entered the issue into the CAP as NCR 357595.

- Emergency Diesel Generator A Frequency Transducer failed on September 11, 2009; however, NCR 247241 was not written until nine days after the failure. Procedure CAP-NGGC-0200 requires an NCR to be written promptly. There was no impact to having this NCR written late. The licensee entered this issue into the CAP as NCR 358348.
- The team reviewed the MCR logs for radiation monitor failures and discovered Channel 2 of Radiation Monitor RM-3567ASA was declared inoperable on June 8, 2009. During troubleshooting efforts, the licensee discovered that the Channel 2 detector had failed. The team questioned the licensee and discovered an NCR was not initiated to document this event. Not entering this issue into CAP had no effect on plant equipment. The licensee entered this issue into the CAP as NCR 358412.
- During a walkdown of the RHR Trains A and B with the licensee, the inspector identified multiple deficiencies which required entry into the CAP. The licensee initiated NCR 355964 for obsolete testing devices remaining on motor operated valve actuators. The licensee initiated NCR 355989 for both RHR pump vibration monitoring cables not enclosed in flexible conduit as per design. The licensee entered two other conditions into the CAP via work requests (WR): WR 399084 for boric acid staining below 1RH-30 (RHR A Heat Exchanger Discharge Valve) and WR 399087 for boric acid on 1SI-359 (LHSI Supply Isolation Valve). Lastly, the licensee initiated WR 399078 for a minor grease leak on 1SI-341 (RHR B Shutdown Cooling Isolation Valve). The team determined that none of these issues impacted operability of the RHR system.
- The MCR annunciator inverter power transfer setpoints were erroneously set to 104 Vdc/Vac during replacement in July 2008. This value was below the plant drawing and vendor recommended setpoint of 120 +/- 10% Vdc/Vac. The licensee entered this issue into the CAP as NCR 355911, determined there was no current impact, and initiated a compensatory measure to log inverter voltage once each shift to assure that the setpoint deficiency had no impact on the functionality of the MCR annunciators.
- A safety system outage on ESW Train A, which caused a quantitative yellow risk condition was extended and scheduled to overlap a qualitative yellow risk condition. After this condition was identified, the licensee delayed the qualitative yellow risk condition to prevent overlapping yellow risk conditions. The licensee's Procedure WCM-001, "On-Line Maintenance Risk Management," offered no

guidance to consider the combined effect of quantitative and qualitative risk conditions. The licensee entered this issue into the CAP as NCR 356048.

### Prioritization and Evaluation of Issues

Based on the review of audits conducted by the licensee and the assessment conducted by the inspection team during the onsite period, the team concluded that problems were generally prioritized and evaluated in accordance with the licensee's CAP procedures as described in the NCR Processing Guidelines in Procedure CAP-NGGC-0200. Each NCR written was assigned a priority level at the NCR review meetings. Management reviews of NCRs were thorough and adequate consideration was given to system or component operability and associated plant risk.

The team determined that the station had conducted root cause and apparent cause analyses in compliance with the licensee's CAP procedures, and assigned cause determinations were appropriate considering the significance of the issues being evaluated. A variety of causal-analysis techniques were used depending on the type and complexity of the issue consistent with licensee Procedure CAP-NGGC-0205.

The team determined that generally, the licensee had performed evaluations that were technically accurate and of sufficient depth. The team further determined that operability, reportability, and degraded or non-conforming condition determinations had been completed consistent with the guidance contained in Procedures CAP-NGGC-0200 and OPS-NGGC-1305, "Operability Determinations." However, the team identified one unresolved item (URI) which is documented in Section 4OA2.a(3)(iii) of this report, and two minor issues in this assessment area during the review of NCRs:

- Emergency Diesel Generator A Frequency Transducer failed on September 11, 2009; however, the licensee determined a reportability review was not required for the failed component as documented in NCR 247241. Procedure CAP-NGGC-0200 requires NCRs be reviewed for reportability. The licensee performed a preliminary review and determined that the frequency transducer failed in a conservative direction. The licensee entered this issue into the CAP as NCR 357786.
- Nuclear Condition Report 263267 investigated the degraded grid time delay relays for the safety-related 6.9 kilovolt (kV) Busses 1A-SA and 1B-SB that failed their as-found TS surveillance test during refueling outage (RFO) 14. The team questioned the licensee on their selected cause for the relay failures and determined that the defective relays were not quarantined or evaluated, following their replacement, in an effort to validate the selected cause. The licensee entered this issue into the CAP as NCR 358290 to improve the quarantine process for defective parts. The team concluded that the selected cause was adequate based on available information and that corrective action to replace the failed relays with a different type of relay was adequate.

### Effectiveness of Corrective Actions

Based on a review of corrective action documents, interviews with licensee staff, and verification of completed corrective actions, the team determined that overall, corrective actions were timely, commensurate with the safety significance of the issues, and effective, in that conditions adverse to quality were corrected in accordance with the licensee CAP procedures. For the significant conditions adverse to quality reviewed, generally the corrective actions directly addressed the cause and effectively prevented recurrence, as evidenced by a review of performance indicators, NCRs, and discussions with licensee staff that demonstrated that the significant conditions adverse to quality had not recurred. Effectiveness reviews for corrective actions to preclude recurrence (CAPRs) were scheduled consistent with licensee procedures. However, during the review of NCRs, the team identified two violations of NRC requirements and an additional minor issue regarding adequacy and timeliness of corrective actions.

The team identified the following two violations:

- Between July 2009 and the present, Containment Spray Additive System Eductor A was found three times and Eductor B was found once outside of the TS 3.6.2.2 flow band. This issue was previously identified as a significant condition adverse to quality in January 2008, but the corrective actions taken failed to preclude recurrence. The team identified one finding for the failure to identify the cause and take CAPR of a significant condition adverse to quality for both containment spray additive system eductors being outside of the TS flow band as documented in Section 4OA2.a(3)(i). The licensee entered this issue into the CAP as NCR 356873.
- Between May 27, 1997 and September 29, 2007, Main Steam Isolation Valve MS-82 close stroke time exhibited a degrading trend towards the TS limit without sufficient corrective actions to prevent failure. This resulted in MS-82 exceeding the five-second stroke time limit required in TS 3.7.1.5. The team identified one finding for failure to correct a condition adverse to quality in a timely manner as documented in Section 4OA2.a(3)(ii). The licensee entered this issue into the CAP as NCR 358464.

The team identified the following minor issue:

- Nuclear Condition Report 290961 evaluated the failure of the main condenser expansion joint that caused a loss of vacuum and resulted in a manual trip of the unit. This issue was discussed in more detail in LER 2008-002-00. The team determined that while the corrective actions were generally adequate, the expansion joint inspection instructions do not contain specific acceptance criteria. Specific acceptance criteria for inspecting for dry rot, cracking, splitting or other signs of degradation is necessary to ensure an objective review to determine if results are satisfactory. The team determined that the potential still exists for degradation not being properly identified. The licensee entered this issue into the CAP as NCR 358345.

(3) Findings

(i) Failure to Preclude Repetition of a Significant Condition Adverse to Quality for Both Containment Spray Additive System Eductors Being Outside of the Technical Specification Flow Band

Introduction. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify the cause and take CAPR of a significant condition adverse to quality for both containment spray additive system eductors being outside of the TS flow band, which resulted in Eductor A found three times and Eductor B found once outside of the TS 3.6.2.2 flow band between July 2009 and the present.

Description. Between November 2007 and May 2008, the containment spray additive system eductors were found outside of the TS 3.6.2.2 flow band seven times. In January 2008, the licensee determined that this was a significant condition adverse to quality and performed a root cause investigation. During the course of their investigation, the licensee identified two root causes: entrapped air in the system and inadequate system design. As CAPRs, the licensee established a procedure to identify air voids in the system, revised the operations procedure to prevent the eductors from being operated with the suction line isolated, and installed more stable throttle valves in the suction line. The licensee reported the condition to the NRC in May 2008 as LER 2008-01-00. This LER was closed as a Licensee Identified Violation (LIV) in Inspection Report 05000400/2008004.

The purpose of the eductor is to introduce sodium hydroxide (NaOH) into the containment spray (CT) system flow during a loss of coolant accident. If there is too little eductor flow, not enough NaOH would be present and the iodine scrubbing capability of the CT system would be reduced. If too much NaOH is present, CT flow pH could rise high enough to increase degradation of aluminum in containment. This could result in increased debris accumulating on the emergency core cooling system recirculation sump screens and reducing performance of the emergency core cooling system. During their previous investigation, the licensee determined that they had experienced eductor flows both above and below the TS flow band.

The team reviewed the licensee's implementation of the CAPRs, and determined the CAPRs were ineffective at precluding repetition of a significant condition adverse to quality since the eductor flows were discovered outside of the TS band between July 2009 and the present. On three occasions flow was below the TS band, and on one occasion flow was above the TS band. The licensee took immediate corrective actions to adjust flow back into the TS band. Additionally, the licensee developed a compensatory measure to dispatch a dedicated operator to adjust flow as necessary in the case of CT initiation. The licensee initiated NCR 356873, reopened the root cause investigation, is reevaluating the cause determination that was performed in 2008, and is developing additional CAPRs to address the root cause.

Analysis. The performance deficiency associated with this finding involved the licensee's failure to identify the cause and take CAPR of a significant condition adverse

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to quality, resulting in both containment spray additive system eductors being outside of the TS 3.6.2.2 flow band. The finding is more than minor because it is associated with the design control attribute of the Barrier Integrity Cornerstone and affects the cornerstone objective of providing reasonable assurance that physical design barriers, such as the iodine scrubbing capability of the containment spray additive system eductors, will protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because it did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, or spent fuel pool; the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere; the finding did not represent an actual open pathway in the physical integrity of reactor containment; and the finding did not involve an actual reduction in function of the hydrogen igniters in the reactor containment. The finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary, and for significant problems, conduct effectiveness reviews of corrective actions to ensure that the problems are resolved (P.1(c)).

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that in the case of a significant condition adverse to quality, the measures taken shall assure that the cause of the condition is determined and corrective action should preclude repetition. Contrary to this requirement, the licensee failed to identify the cause and take CAPR of both containment spray additive system eductors being outside of the TS flow band. Specifically, between July 2009 and the present, the violation occurred when Eductor A was found three times and Eductor B was found once outside of the TS 3.6.2.2 flow band.

The licensee took immediate corrective action to throttle eductor flow to within the TS band, and is developing CAPRs. Because the finding is of very low safety significance and has been entered into the licensee's CAP as NCR 356873, this violation is being treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy: NCV 05000400/ 2009006-01, "Failure to Preclude Repetition of a Significant Condition Adverse to Quality for Both Containment Spray Additive System Eductors Being Outside of the Technical Specification Flow Band."

(ii) Failure to Correct a Condition Adverse to Quality Involving a Main Steam Isolation Valve Degrading Trend Before Valve Failure

Introduction. The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to correct a condition adverse to quality in a timely manner, which resulted in MS-82 exceeding the TS stroke time limit.

Description. On September 29, 2007, Valve MS-82 failed surveillance test Procedure OST-1046, "Main Steam Isolation Valve Operability Test Quarterly Interval

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Mode 3 to 5," due to exceeding the close stroke time limit of five seconds. Technical Specification Surveillance Requirement 4.7.1.5, "Main Steam Line Isolation Valves," requires this valve to stroke close within five seconds. The main steam isolation valves are required to close to act as a barrier to a radiological release during a steam generator tube rupture or to mitigate a main steam line break. The licensee declared Valve MS-82 inoperable, wrote NCR 248429, and performed WO 1120864 to repair the valve and decrease the stroke time.

The licensee had been trending the close stroke time of Valve MS-82 since December 29, 1986. The close stroke time trend started to degrade around May 27, 1997. In May 2004, the valve was labeled low margin due to the valve stroking close at 4.74 seconds, which was approaching the five-second limit. Between May 2004 and RFO 13 in April 2006, the valve stroke time continued to increase so that at the start of RFO 13 the valve stroked close at 4.96 seconds. The licensee replaced the actuator of the valve; however, the as-left valve stroke time at the end of RFO 13 was still near the TS limit at 4.92 seconds.

The licensee developed contingency WO 1120864 for RFO 14, to gain stroke time margin by adjusting the air operated valve hydraulic system flow control valve. During RFO 14, on September 29, 2007, Valve MS-82 failed the stroke time close test by stroking at 5.17 seconds. The licensee implemented contingency WO 1120864.

The team reviewed NCR 248429 and the close stroke time trend for Valve MS-82. The team questioned why the degrading trend since 1997 had not been identified, and an NCR had not been written to correct the condition. The team determined that unlike the other valves in the in-service testing program, no process or procedure existed to identify a degrading trend on a main steam isolation valve, write a NCR, and correct the condition before valve failure. The team determined this issue was indicative of current plant performance since no process or procedure currently exists.

The team questioned that with the degrading trend nearing the close stroke time limit, why effective maintenance was not performed in RFO 13 to ensure the valve would not exceed the TS close stroke time before RFO 14. The team reviewed the surveillance test performed on April 8, 2006, and noted that the licensee was still in Mode 5 where maintenance could have been performed on the valve. However, the team noted that the surveillance test results were not reviewed until April 11, 2006, when the plant was in Mode 3, when maintenance could not be performed on the valve. The team also reviewed NCR 248429 that stated "It consistently has been a conscious decision not to adjust these valves to gain stroke time margin because of the ensuing post maintenance test required." This NCR also stated that the decision not to perform maintenance was deemed to be an acceptable risk. Not performing effective maintenance on the degrading stroke time close trend for Valve MS-82 led to the failure of this valve in RFO 14. The licensee wrote NCR 358464 to address why corrective actions were not taken before Valve MS-82 failed.

Analysis. The performance deficiency associated with this finding involved the licensee's failure to correct a condition adverse to quality in a timely manner, which resulted in Valve MS-82 exceeding the TS stroke time limit. This finding is more than

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minor because it is associated with the containment barrier performance attribute of the Barrier Integrity Cornerstone and affects the cornerstone objective of providing reasonable assurance that physical design barriers, such as the main steam isolation valve radiological release barrier required for a steam generator tube rupture, protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to have a very low safety significance because it did not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, or spent fuel pool; the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere; the finding did not represent an actual open pathway in the physical integrity of reactor containment; and the finding did not involve an actual reduction in function of the hydrogen igniters in the reactor containment. This finding has a cross-cutting aspect in the area of human performance associated with decision-making because the licensee did not use conservative assumptions so that safety-significant decisions were verified to validate underlying assumptions and identify unintended consequences (H.1.(b)).

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to this requirement, between May 27, 1997 and September 29, 2007, the licensee failed to identify and correct a condition adverse to quality for a trend degrading towards the technical specification limit, without sufficient corrective actions to prevent failure. This resulted in Main Steam Isolation Valve 82 exceeding the five-second stroke time limit required in Technical Specification 3.7.1.5. Because the finding is of very low safety significance and has been entered into the licensee's CAP as NCR 358464, this violation is being treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy: NCV 05000400/2009006-02, "Failure to Correct a Condition Adverse to Quality Involving a Main Steam Isolation Valve Degrading Trend Before Valve Failure."

(iii) Unresolved Item Associated With the Evaluation of the Failure of Emergency Service Water Valve 271

Introduction. The inspectors identified a URI associated with the evaluation of the failure of ESW Auxiliary Reservoir Discharge Valve 271 to open on the start of ESW Pump B.

Description. On October 19, 2007, while in Mode 5, ESW Auxiliary Reservoir Discharge Valve 271 failed to open on the start of ESW Pump B. This valve is required to open on the start of an ESW pump to provide a discharge path for the cooling water. Operators immediately stopped ESW Pump B and aligned normal service water to the safety related components in Train B. The licensee determined that the auto open controls for Valve SW-271 had been disabled by a clearance order for unrelated work. Although ESW Train B is not required to be operational in Mode 5, the components cooled by ESW Train B, such as EDG B and RHR Train B, were being relied upon as protected train equipment. Therefore, ESW Train B was necessary to ensure core decay heat removal in the event that off-site power was not available. NRC inspectors wrote a self-revealing NCV of TS 6.8.1, "Programs and Procedures," for an inadequate clearance order as documented in NRC Integrated Inspection Report

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05000400/2007005. The team reviewed the evaluation performed for this NCV including the reportability review. The reportability review stated this condition was not reportable since operators were able to open this valve manually from the control room. The team questioned whether the operators would be able to open the valve within one minute, which is required to ensure cooling to the EDGs during an accident. The team also determined that when the valve is manually opened by the reactor operators from the control room, that the valve would automatically go closed due to the inadequate clearance. As a result of the team's questions, the licensee wrote NCR 358062 and determined that the failure of SW-271 to open was a MRFF. This failure did not exceed the ESW Train B maintenance rule performance criteria. The licensee determined that this failure affected the MSPI. This condition could prevent the fulfillment of the safety function of EDG B and RHR B that are needed to maintain the reactor in a safe shutdown condition or to remove residual heat. The licensee wrote NCR 361821 to address this issue. This issue is considered unresolved pending additional NRC review of the evaluation of the failure including the reportability review, the risk assessment, and the corrective actions: URI 05000400/2009006-03, "Unresolved Item Associated with the Evaluation of the Failure of Emergency Service Water Valve 271."

b. Assessment of the Use of Operating Experience

(1) Inspection Scope

The team examined licensee programs for reviewing industry operating experience (OE), reviewed licensee's Procedure CAP-NGGC-0202, "Operating Experience Program," and reviewed the licensee's OE database, to assess the effectiveness of how external and internal OE data was handled at the plant. In addition, the team selected OE documents (e.g., NRC generic communications, 10 CFR Part 21 reports, LERs, vendor notifications, etc.), which had been issued since August 2007, to verify whether the licensee had appropriately evaluated each notification for applicability to the Shearon Harris Nuclear Power Plant, and whether issues identified through these reviews were entered into the CAP.

Documents reviewed are listed in the Attachment.

(2) Assessment

Based on interviews and a review of documentation related to the review of OE issues, the team determined that the licensee was generally effective in screening OE for applicability to the plant. Industry OE was evaluated at either the corporate or plant level depending on the source and type of document. Relevant information was then forwarded to the applicable department for further action or informational purposes. Operating experience issues requiring action were entered into the CAP for tracking and closure. In addition, OE was included in apparent cause and root cause evaluations in accordance with licensee Procedure CAP-NGGC-0205.

(3) Findings

No findings of significance were identified.

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c. Assessment of Self-Assessments and Audits

(1) Inspection Scope

The team reviewed audit reports and self-assessment reports, including those which focused on problem identification and resolution, to assess the thoroughness and self-criticism of the licensee's audits and self-assessments, and to verify that problems identified through those activities were appropriately prioritized and entered into the CAP for resolution in accordance with licensee Procedure CAP-NGGC-0201, "Self-Assessment and Benchmark Programs."

(2) Assessment

The team determined that the scopes of assessments and audits were adequate. Self-assessments were generally detailed and critical, as evidenced by findings consistent with the team's independent review. Self-assessment findings related to issues or weaknesses were entered into the CAP and tracked to completion based on the NCR priority level. Corrective actions for self-assessment findings were adequate to address the issues. Generally, the licensee performed evaluations that were technically accurate. Site trend reports were thorough and a low threshold was established for evaluation of potential trends; however, the team determined that not enough time had passed to assess trends or for the licensee to develop goals and thresholds for the newly developed performance indicators, such as corrective maintenance backlog or preventative maintenance deferred. The team concluded that the self-assessments and audits were an effective tool to identify adverse trends.

(3) Findings

No findings of significance were identified.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

The team randomly interviewed 29 on-site workers from maintenance, security, operations, chemistry, and engineering organizations regarding their knowledge of the corrective action program at Shearon Harris and their willingness to write NCRs or raise safety concerns. During technical discussions with members of the plant staff, the team conducted interviews to develop a general perspective of the safety-conscious work environment at the site. The interviews were also conducted to determine if any conditions existed that would cause employees to be reluctant to raise safety concerns. The team reviewed the licensee's employee concerns program (ECP) and interviewed the ECP coordinator. Additionally, the team reviewed the latest Safety Culture Assessment to evaluate the thoroughness and self-criticism of the licensee's assessment, and to verify that problems identified were appropriately prioritized and entered into the CAP for resolution. Finally, the team reviewed a sample of completed ECP reports to verify that concerns were being properly reviewed and identified deficiencies were being resolved and entered into the CAP when appropriate.

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(2) Assessment

Based on the interviews conducted and the NCRs reviewed, the team determined that licensee management emphasized the need for all employees to identify and report problems using the appropriate methods established within the administrative programs, including the CAP and ECP. These methods were readily accessible to all employees. Based on discussions conducted with a sample of plant employees from various departments, the team determined that employees felt free to raise issues, and that management encouraged employees to place issues into the CAP for resolution. The team did not identify any reluctance on the part of the licensee staff to report safety concerns.

(3) Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On October 2, 2009, the team presented the inspection results to Mr. Christopher Burton and other members of the site staff. On October 26, 2009, the team lead re-exited the inspection results concerning the unresolved item to Mr. Dave Corlett.

The team confirmed that all proprietary information reviewed was returned to the licensee during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel

B. Bernard, Superintendent, Security  
C. Burton, Vice President Harris Plant  
D. Corlett, Supervisor, Licensing/Regulatory Programs  
J. Dills, Manager, Operations  
J. Doorhy, Licensing  
K. Harshaw, Manager, Outage and Scheduling  
K. Henderson, Plant General Manager  
J. Jankens, Supervisor, Radiation Control  
G. Kilpatrick, Training Manager  
P. Morales, Employee Concerns Program  
L. Morgan, Supervisor, Self Evaluation Unit  
S. O'Connor, Manager, Engineering  
M. Parker, Superintendent, Radiation Protection  
B. Parks, Manager, Nuclear Oversight Section  
J. Robinson, Superintendent, Environmental and Chemistry  
H. Szews, CAP Coordinator  
J. Warner, Manager, Support Services

#### NRC

J. Austin, Senior Resident Inspector  
R. Musser, Chief, Reactor Projects Branch 4, Division of Reactor Projects, Region II

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened and Closed

05000400/2009006-01	NCV	Failure to Preclude Repetition of a Significant Condition Adverse to Quality for Both Containment Spray Additive System Eductors Being Outside of the Technical Specification Flow Band (Section 4OA2.a(3)(i))
05000400/2009006-02	NCV	Failure to Correct a Condition Adverse to Quality Involving a Main Steam Isolation Valve Degrading Trend Before Valve Failure (Section 4OA2.a(3)(ii))

#### Opened

05000400/2009006-03	URI	Unresolved Item Associated with the Evaluation of the Failure of Emergency Service Water Valve 271 (Section 4OA2.a(3)(iii))
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#### Closed

None

#### Discussed

None

## LIST OF DOCUMENTS REVIEWED

### Procedures

ADM-NGGC-0113, Performance Planning and Monitoring, Revision 0  
ADM-NGGC-0101, Maintenance Rule Program, Revision 20  
ADM-NGGC-0104, Work Management Process, Revision 33  
AP-013, Plant Nuclear Safety Committee, Revision 34  
AP-930, Plant Observation Program, Revision 10  
AOP-022, Loss of Service Water, Revision 29  
OPS-NGGC-1305 Operability Determinations, Revision 1  
CAP-NGGC-0200, Corrective Action Program, Revision 27  
CAP-NGGC-0201, Self Assessment and Benchmark Programs, Revision 12  
CAP-NGGC-0202, Operating Experience Program, Revision 15  
CAP-NGGC-0205, Significant Adverse Condition Investigations and Adverse Condition Investigations – Increased Rigor, Revision 9  
CAP-NGGC-0206, Corrective Action Program Trending and Analysis, Revision 3  
NOS-NGGC-0400, Employee Concerns Program, Revision 0  
EGR-NGGC-0010, System & Component Trending Program and System Notebooks, Revision 13  
ISI-801, Inservice Testing of Valves, Revision 47  
HESS Standards, Revision 5  
OST-1046, Main Steam Isolation Valve Operability Test Quarterly Interval Mode 3 to 5, Revision 12  
PLP-624, Mechanical Equipment Qualification Program, Revision 18  
OP-148, Essential Services Chilled Water System, Revisions 37 and 49  
HPS-NGGC-0003, Radiological Posting, Labeling and Surveys, Revision 14  
MST-E0045, 6.9 KV Emergency Bus 1A-SA and 1B-SB Under Voltage Relay Channel Calibration, Revision 23  
ADM-NGCC-0203, Preventative Maintenance and Surveillance Testing Administration, Revision 13  
OST-1124, Train B 6.9 KV Emergency Bus Undervoltage Trip Actuating Device Operational Test and Contact Check Modes 1-6, Revision 25  
HPS-NGGC-1000, Radiation Protection and Conduct of Operations, Revision 0  
SP-013 Administrative/Support Key and Lock Control, Revision 12  
AP-504 Administrative Controls for Locked and Very High Radiation Areas, Revision 29  
PLP-511 Radiation Control and Protection Program, Revision 20  
CRC-240 Plant Vent Stack 1 Effluent Sampling, Revision 11  
HNPS-NGGC-0003, Radiological Posting, Labeling and Surveys, Revision 14  
MST-E0075, 6.9 KV Emergency Buses, 1A-SA and 1B-SB Undervoltage (Loss of Voltage) Channel Calibration, Revision 6  
NGGM-IA-0038, Carolinas - Nuclear Generation Group Siren Maintenance, Revision 1  
ERC-004, Environmental and Chemistry Administrative Guidelines, Revision 25  
SEC-NGGC-2120, Protection of Safeguards Information, Revision 22  
WCM-001, On-Line Maintenance Risk Management, Revision 20  
OST-1118, Containment Spray Operability Train A Quarterly Interval Modes 1-4, Revision 33  
OST-1119, Containment Spray Operability Train B Quarterly Interval Modes 1-4, Revision 35  
MST-I0019, Main Steam/Feedwater Flow Loop 2 Channel Calibration, Revision 16  
ADM-NGGC-0104, Work Management Process, Revision 33  
MMM-002, Corrective Maintenance, Revision 17

MNT-NGGC-1000, Fleet Conduct of Maintenance, Revision 0  
 WCM-005, Work Order Prioritization Process, Revision 8

Completed Surveillance Tests

OST-1046, Main Steam Isolation Valve Operability Test Quarterly Interval Mode 3 to 5,  
 Revision 12, September 29, 2007  
 OST-1046, Main Steam Isolation Valve Operability Test Quarterly Interval Mode 3 to 5,  
 Revision 12, May 11, 2006  
 MST-I0412, Waste Processing Building (WPB) Stack 5 Flow Rate Monitor and Isokinetic  
 Sampling System Calibration, August 20, 2009

Action Requests/Nuclear Condition Reports

223911	244705	245320	245633	246582	247241
248429	250575	250810	262037	263421	266234
269409	279287	279715	281217	286843	297210
300052	300163	301267	315670	318483	320236
320444	323631	329044	330455	337027	338184
340240	340325	230031	238372	238374	263439
263441	270215	282037	287726	249284	330423
301267	329438	331701	346484	282037	279704
358062	350078	251296	249347	357786	250810
279715	244705	249347	344729	266234	248429
249992	253347	257853	262001	262192	263486
265063	267065	267066	267080	267244	268566
269406	271452	275878	278486	280015	281538
285149	285222	290761	299832	306876	316594
319422	333716	196258	221803	222730	224208
228947	253347	314660	301267	300163	286843
280649	279988	277165	269409	251296	249347
266234	263921	250810	248429	247241	244705
246582	262037	245320	245633	281217	330455
279715	231046	303142	211360	246397	292892
332141	334996	246397	292892	334934	334167
334937	263267	334936	249331	316381	253376
245663	286104	288188	326920	310739	226843
267946	307600	340516	329378	352310	283579
274978	255529	330676	241895	261182	231941
328537	201481	229805	248378	226843	327372
301730	315269	171602	188528	191359	197522
207516	223563	225187	236248	243993	246188
247129	251191	252290	254402	258053	258053
261182	263759	270318	274708	279681	281080
291651	292337	305661	313305	323057	331371
349905	350640	351437	351623	351623	355964
355989	244576	248430	252234	252471	264812
302079	317205	317280	329488	329489	331169
333828	333830	336394	340319	310373	336342
336569	247193	251437	266063	278730	279326

297789

Operating Experience Action Requests

306876	317361	327306	297210	329044	337027
234055	270275	291396	291403	302656	306234

Audits and Self-Assessment Items

07-16-SP-H, HNP Nuclear Safety Culture Assessment, June 6, 2007

H-SE-06-01, Harris Site Wide Self Evaluation, June 20, 2006

H-SE-08-01, Harris Nuclear Plant Self Evaluation and Human Performance Assessment,  
June 16, 2008

H-OP-09-01, Assessment of Harris Operations Program, September 14, 2009

H-OM-FR-09-03, Focused Review of Return to Service Plans, January 19-23, 2009

H-MC-08-01, Harris Nuclear Material and Contact Services Assessment, February 7, 2008

H-MA-08-01, Harris Nuclear Plant Maintenance Assessment, July 2, 2008

H-TQ-07-01, Harris Nuclear Plant Training and Qualification Assessment, May 18, 2007

216880, Maintenance Procedure Backlog and Quality, August 6-10, 2009

312544, RFO-15 Post Outage Self Assessment, May 18 – June 15, 2009

314117, Harris Mid-Cycle Assessment, January 26 – February 6, 2009

264521, Closed Systems With the Source of Demineralized Water, June 2 – 5, 2008

H-ES-09-01, Harris Engineering Support Section Assessment

H-EC-08-01, HNP Environmental and Chemistry, Assessment, April 9, 2008

H-EC-06-01, HNP Environmental and Chemistry, Assessment, April 25, 2006

H-FR-07-03, Results of Environmental and Chemistry Review, January 28, 2008

H-EP-08-01, HNP Emergency Preparedness Assessment, September 26, 2008

H-EP-07-01, HNP Emergency Preparedness Assessment, October 15, 2007

H-SC-08-01, HNP Security Assessment, May 29, 2008

H-SC-07-01, HNP Security Assessment, June 14, 2007

Effectiveness Reviews

250171	226902	225952	222534	206710	201667
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Work Orders

01299014	01083809	01083013	01407305	01432464	01007488
01301181	01536832	01116354	01172181	01154591	01432540
01557072	01579680	01581990	01581962	01503467	01120864
00417204	01150648	01284574	01293105	01300467	01300968
01346720	01346721	01363224	01396056	01396242	01496138
01500794	01542758	01544206	00103940	794838	1057227
1062572	1137107	1463763	1457995	1548788	769595
769599	1342247	1342249	1342251	1136753	1527115
1527116	1402107	1076326	1070000	1133326	1379777
1291028	1439053	1535610	1367060	1552520	

Engineering Changes

EC66198, Evaluation of R14 UT Results of Service Water Piping, Revision 0

EC69988, Replace Isokinetic Sampling Skid, Revision 3

Other Documents

Site Key Performance Indicators, January – August, 2009  
 Daily Management Review Meeting Agenda, September 15 and 16, 2009  
 Joint Steering Committee and Core Team Meeting Agenda, June 2 and 4, 2009  
 Key Performance Indicators for Site Human Performance, January – August, 2009  
 Clearance Order 153137, R14 Smoke Damper Installation, October 8, 2007  
 Clearance Order 108581, Replace Piston Actuator on 1MS-82, April 14, 2006  
 Harris Shift Narrative Log, October 8 – 19, 2007  
 Stroke Time Trend Data for 1SW-40, 1SW-271, and 1SW-274, October 2007  
 Harris Relief Request I3R-05, 2008  
 Drawing 2166-B-401, Service Water System 'B' Miscellaneous Alarms, Sheet 2232  
 Drawing 2166-B-401, Auxiliary Transfer Panel, Sheets 822, 835, 842, 847, 846, 3297  
 Harris Nuclear Safety Culture Assessment, June 6, 2007  
 Harris Nuclear Safety Culture Debrief Notes, September 14-18, 2009  
 Harris Shift Narrative Log, October 14-16, 2007  
 Calculation CT-0063, Void Size Acceptance Criteria for Presence of Air within the Containment Spray Additive System, Revision 0  
 Calculation HNP-M/Mech-1095, Limiting Void Sizes for Containment Spray Suction Piping, Revision 0  
 Drawing CPL-2165, S-0550, Containment Spray System, Revision 16  
 NUREG-1022, Event Reporting Guidelines 10 CFR 50.72 and 50.73, Revision 2  
 Main Steam Isolation Valves 80, 82, and 84 Closed Stroke Time Trends, 2001-2009  
 4085 - Essential Services Chilled Water System Health Report, July 28, 2009  
 ESCW Preventative Maintenance for 2007, September 30, 2009  
 3Q07 – 4Q08 Site Trend Reports, Self Evaluation Rollup and Trend Analysis  
 Plant Nuclear Safety Committee Action Items, July 15, 2009  
 Nuclear Safety Review Committee Meeting Minutes, August 21, 2007, October 29, 2007, June 3, 2008, August 19, 2008  
 SD-148, System Description, Essential Services Chilled Water, Revision 15  
 DBD-132, Design Basis Document, Essential and Nonessential Services Chilled Water, Revision 10  
 Drawing 5-S-0998, Simplified Flow Diagram, HVAC Essential Services Chilled Water, Revision 7  
 CPL 2166 S-0302, Medium Voltage Relay Settings 6900V Emer. Bus 1A-SA Sheets 20, 23 and 24, Revision 9  
 SD-156, Plant Electrical Distribution System Description, Revision 13  
 System Health Report 6.9KV AC Distribution, 1<sup>st</sup> Quarter 2009, July 20, 2009  
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