



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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February 11, 2013

Mr. Larry Weber  
Senior Vice President and  
Chief Nuclear Officer  
Indiana Michigan Power Company  
Nuclear Generation Group  
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Bridgman, MI 49106

**SUBJECT: D.C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2 – NRC INTEGRATED  
INSPECTION REPORT 05000315/2012005 and 05000316/2012005**

Dear Mr. Weber:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your D.C. Cook Nuclear Power Plant, Units 1 and 2. The enclosed inspection report documents the inspection results which were discussed on January 24, 2013, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

One NRC identified and one self-revealing finding of very low safety significance (Green) were identified during this inspection.

Both of these findings were determined to involve violations of NRC requirements. Additionally, the NRC has determined that a traditional enforcement Severity Level IV violation occurred. This traditional enforcement violation did not include an associated finding. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations, or the significance of the NCVs, 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 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at D. C. Cook.

L. Weber

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If you disagree with a cross-cutting aspect assignment 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 III; and the NRC Resident Inspector at D.C. Cook.

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 NRC's Agencywide Document Access and Management 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/*

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket Nos. 05000-315; 05000-316  
License Nos. DPR-58; DPR-74

Enclosure: Inspection Report 05000315/2012005 and 05000316/2012005  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000315; 05000316

License Nos: DPR-58; DPR-74

Report No: 05000315/2012005; 05000316/2012005

Licensee: Indiana Michigan Power Company

Facility: D.C. Cook Nuclear Power Plant, Units 1 and 2

Location: Bridgman, MI

Dates: October 1 through December 31, 2012

Inspectors: J. Ellegood, Senior Resident Inspector  
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Approved by: John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report (IR) 05000315/2012005, 05000316/2012005; 10/01/2012 – 12/31/2012; D.C. Cook Nuclear Power Plant, Units 1 & 2; Heat Sink Performance, Licensed Operator Requalification Program and Maintenance Effectiveness

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One Green finding was identified by the inspectors. The finding was considered a non-cited violation (NCV) of NRC regulations. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components within the Cross Cutting Areas" dated October 28, 2011. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated June 7, 2012. 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.

### A. NRC-Identified and Self-Revealed Findings

#### **Cornerstone: Initiating Events**

- Green: The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure to perform an evaluation required to meet 10 CFR Part 50, Appendix B, Criterion XI, on essential service water piping. Specifically, the inspectors identified the licensee failed to perform a required evaluation on a segment of essential service water piping when the results of the pipe wall thickness measurements demonstrated they were below the established minimum wall thickness acceptance criteria. The licensee entered the issue into their corrective action program and based on an engineering evaluation determined the condition did not represent an operability concern and the structural integrity of the piping system was not compromised.

The performance deficiency was determined to be more than minor because if left uncorrected it had the potential to lead to a more significant safety concern. Specifically, by not performing the required evaluation there was a potential to return a system to service that could exceed the design limits prior to the next inspection. The issue impacted the initiating events cornerstone because the degraded wall thickness could lead to a loss of service water and/or internal flooding initiating event; and the issue adversely affected the attribute of equipment reliability. The finding was screened as very low safety significance (Green) because a subsequent evaluation demonstrated that this issue did not result in the complete or partial loss of operability of the essential service water system. The inspectors determined the finding had a cross-cutting aspect in the area of human performance because the licensee did not follow their procedure which required them to generate an action request and perform an evaluation when acceptance criteria were not met. [H.4(b)] (Section 1R07.1)

#### **Cornerstone: Mitigating Systems**

- Green. A self-revealed finding of very low safety significance (Green) and associated NCV occurred based on two violations of 10 CFR 50 Appendix B, Criterion V in the

fourth quarter of 2012. The violations occurred due to failure of licensee personnel to secure High Energy Line Break (HELB)/Fire barrier doors following use of the door as required by procedure. These examples resulted in inoperability of Auxiliary Feedwater (AFW) pumps during the two periods when the doors were no longer in use for personnel transit. Upon discovery, the licensee restored the doors to an operable condition. The licensee entered the issues into the corrective action program (CAP).

The performance deficiency was determined to be more than minor because it is associated with the mitigating system cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences; and the issue adversely affected the attribute of equipment reliability. The inspectors determined that the finding was of very low safety significance because inoperability of the safety related auxiliary AFW system was less than allowed outage times in technical specifications. However, due to the multiple mitigative functions performed by the doors, the inspectors requested a review by the regional senior risk analyst (SRA). The doors protect the mitigating AFW systems from fire and high energy line breaks. The SRA concurred with the inspectors that the finding was of very low safety significance (Green) based on a bounding Probabilistic Risk Analysis using the Standardized Plant Analysis Risk (SPAR) model. The inspectors determined the finding had a cross-cutting aspect in the area of human performance because the licensee did not use human error prevention techniques. [H.4(a)] (Section 1R12.1)

#### **Other Findings**

- **Severity Level IV.** An NCV of 10 CFR 50.9, "Completeness and Accuracy of Information," was identified due to the submittal of inaccurate medical information for a licensed operator. The submittal to the NRC was inaccurate because it certified that the operator had been medically examined and had met all medical qualifications, when in fact, a Senior Reactor Operator (SRO) did not disclose that he had been prescribed a therapeutic device to treat sleep apnea. The licensee entered the issues into the corrective action program (CAP). The licensee's corrective actions included amending the SRO licensee to include the restriction related to use of a medical device.

The SRO was unaware that being prescribed a therapeutic device for treatment of sleep apnea in March 2010 was a condition requiring reporting. The licensee submitted medical information associated with relicensing the SRO in March 2012 that was incomplete and incorrect for the SRO. Because violations of 10 CFR 50.9 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the traditional enforcement process. In accordance with the Enforcement Policy, the inspectors concluded that the violation was a Severity Level IV because the SRO met ANSI/ANS 3.4 criteria but failed to report a condition that required an amended license. The licensee's failure to provide complete and accurate information to the NRC impacted the regulatory process because it resulted in an incorrect licensing action and is a performance deficiency. This is a minor ROP issue since the non-disclosure of a medical condition for a licensed operator did not result in an adverse impact on plant operation. Since there is no ROP Finding, there is no cross-cutting aspect associated with this violation. (Section 1R11.3)

#### **B. Licensee-Identified Violations**

No findings were identified.

## REPORT DETAILS

### Summary of Plant Status

Unit 1 operated at or near 100 percent power until October 26. On October 26, the licensee reduced power to 55 percent due to increasing feed pump vibrations and strainer differential pressure. After removing foreign material from the feed pump and replacing strainer baskets, the licensee raised power to 100 percent. The licensee reached 100 percent power on November 3 and remained at or near 100 percent power for the remainder of the quarter.

Unit 2 operated at or near 100 percent power until November 28. On November 28, the licensee began power reduction to 25 percent to support containment entry on November 29 to troubleshoot the failure of steam generator #3 narrow range level transmitter. The licensee identified a leak on the reference leg of the instrument and performed an American Society of Mechanical Engineers code case repair on November 29. Following repair, the licensee raised power to 100 percent. The licensee reached 100 percent power on December 1 and remained at or near 100 percent power for the remainder of the quarter.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather Protection (71111.01)

##### .1 Readiness for Impending Adverse Weather Condition – Extreme Cold Conditions

##### a. Inspection Scope

Since below freezing conditions were forecast in the vicinity of the facility for November 2012, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. During the week of November 12, 2012, the inspectors walked down the independent spent fuel storage installation observation building, fire protection water storage tanks piping and subpanel, and supplemental diesel generators and switchgear enclosures because their risk significant functions could be affected or required as a result of the freezing conditions forecast for the facility. The inspectors observed insulation, heat trace circuits, space heater operation, and weatherized enclosures to ensure operability or functionality of affected systems. The inspectors focused on plant management's actions for implementing the station's procedures for ensuring equipment would remain operable or functional during the forecast weather conditions. The inspectors verified licensee actions to prepare for the adverse weather did not impact safe plant operation. The inspectors verified adequate licensee staffing. Specific documents reviewed during this inspection are listed in the Attachment to this report.

This inspection constituted one readiness sample for impending adverse weather condition as defined in Inspection Procedure (IP) 71111.01-05.

##### b. Findings

No findings were identified.

## 1R04 Equipment Alignment (71111.04)

### .1 Quarterly Partial System Walkdowns

#### a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk significant systems:

- Unit 1 CD emergency diesel generator (EDG) with AB EDG inoperable due to fire door replacement;
- Unit 2 turbine driven auxiliary feed water system with condensate storage tank supply isolated from hot wells during ultrasonic testing; and
- Unit 1 West service water during east service water modification installation.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report (UFSAR), Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the Corrective Action Program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three partial system walkdown samples as defined in IP 71111.04-05.

#### b. Findings

No findings were identified.

### .2 Semi-Annual Complete System Walkdown

#### a. Inspection Scope

During the week of October 22, 2012, the inspectors performed a complete system alignment inspection of the Unit 2 component cooling water system to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment



cooling; hangers and supports; operability of support systems; and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk significant plant areas:

- Fire Zone 47A; Unit 2 AB 4KV switch gear room;
- Fire Zone 18; Unit 2 CD diesel generator room;
- Fire Zone 19; Unit 2 AB diesel generator room; and
- Fire Zone 61, Unit 1/2 containment spray additive tank room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan.

The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event.

Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP.

Documents reviewed are listed in the Attachment to this report.

These activities constituted four quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the service water and condensate storage. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area(s) to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- Emergency service water piping tunnel.

Specific documents reviewed during this inspection are listed in the Attachment to this report. This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07T)

a. Inspection Scope

The inspectors reviewed operability determinations, completed surveillances, vendor manual information, associated calculations, performance test results, and cooler inspection results associated with the south Control Room Air Conditioner Condensers (1-HE-64-S, 2-HE-64-S). These heat exchangers/coolers were chosen based on their risk significance in the licensee's probabilistic safety analysis, their important safety-related mitigating system support functions, their operating history and their relatively low margin.

For the south Control Room Air Conditioner Condensers (1-HE-64-S, 2-HE-64-S), the inspectors reviewed the methods and results of heat exchanger performance inspections. The inspectors verified the methods used to inspect and clean heat exchangers were consistent with as-found conditions identified and expected

degradation trends and industry standards, the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry standards, and the as-found results were recorded, evaluated, and appropriately dispositioned such that the as-left condition was acceptable.

In addition, the inspectors verified the condition and operation of the south Control Room Air Conditioner Condensers were consistent with design assumptions in heat transfer calculations and as described in the final safety analysis report. This included verification that the number of plugged tubes was within pre-established limits based on capacity and heat transfer assumptions. The inspectors verified the licensee evaluated the potential for water hammer and established adequate controls and operational limits to prevent heat exchanger degradation due to excessive flow-induced vibration during operation. In addition, visual inspection records were reviewed to determine the structural integrity of the heat exchanger.

The inspectors verified the performance of ultimate heat sinks and safety-related service water systems and their subcomponents such as piping, intake screens, pumps, valves, etc. by tests or other equivalent methods to ensure availability and accessibility to the inplant cooling water systems.

The inspectors performed a system walkdown on service water systems to verify the licensee's assessment on structural integrity. In addition, the inspectors reviewed available licensee's testing and inspections results, licensee's disposition of any active thru wall pipe leaks, and the history of thru wall pipe leakage to identify any adverse trends since the last NRC inspection. For buried or inaccessible piping, the inspectors reviewed the licensee's pipe testing, inspection, or monitoring program to verify structural integrity, and ensured that any leakage or degradation has been appropriately identified and dispositioned by the licensee. The inspectors verified that the periodic piping inspection program adequately detected and corrected protective coating failure, corrosion and erosion. The inspectors verified that the licensee adequately monitored and resolved any adverse trends for the deep draft vertical pumps by reviewing the operational history and inservice test vibration monitoring results.

The inspector performed a system walkdown of the service water intake structure to verify the licensee's assessment on structural integrity and component functionality. This included the verification that licensee ensured proper functioning of traveling screens and strainers, and structural integrity of component mounts. In addition, the inspectors verified that service water pump bay silt accumulation is monitored, trended, and maintained at an acceptable level by the licensee, and that water level instruments are functional and routinely monitored. The inspectors also verified the licensee's ability to ensure functionality during adverse weather conditions. The inspectors also verified that the licensee had adequately protected against silt introduction during periods of low flow or low level.

In addition, the inspectors reviewed condition reports related to the heat exchangers/coolers and heat sink performance issues to verify the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions. The documents reviewed are included in the Attachment to this report.

These inspection activities constituted two heat sink inspection samples as defined in IP 71111.07-05.

b. Findings

Failure to Perform an Evaluation on Essential Service Water Piping

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure to perform an evaluation on essential service water piping. Specifically, the inspectors identified the licensee failed to perform an evaluation needed to comply with 10 CFR Part 50, Appendix B, Criterion XI, "Test Control" on a segment of essential service water piping when the results of the pipe wall thickness measurements demonstrated they were below the established minimum wall thickness acceptance criteria.

Description: Procedure 12-EHP-8913-001-001, "Program for Implementing Generic Letter (GL) 89-13 Inspections," defined the program and process for implementing GL 89-13, "Service Water System Problems Affecting Safety-Related Equipment." GL 89-13 identified an acceptable means to meet the requirements of 10 CFR Part 50, Appendix B, Criterion XI. As a part of this program the licensee performed nondestructive testing on various pipe sections in the essential service water system. These ultrasonic test (UT) examinations specifically look at the wall thickness of the pipe sections with the purpose of identifying any degradation caused by corrosion, erosion, cavitation or other potential degradation mechanisms. These examinations ensure the structural integrity of the system by taking a representative test sample to provide confidence that comparable pipe sections would have similar inspection results.

The inspectors reviewed a sample of completed examination reports for thickness measurements performed on essential service water piping to verify compliance with procedures and to ensure necessary actions were taken to address any potential degradation. During this review the inspectors identified two examination reports where the acceptance criterion was exceeded. In accordance with 12-EHP-8913-001-001, if pipe wall thickness was found to be below the stated acceptance criteria, then an action request shall be generated and an evaluation was required to be performed.

The licensee, however, did not generate an action request for either of the examples when the acceptance criterion was exceeded, and therefore an evaluation was not performed. The purpose of the evaluation was to determine whether the pipe would be able to reach the next examination cycle without going below the design minimum wall thickness. Without an evaluation, the pipes' capability was called into question. The licensee subsequently entered this issue into their CAP as AR 2012-14855, "Pipe Wall Issues not Entered into CAP," and performed an evaluation that demonstrated in both cases the pipe wall thickness would not exceed the design minimum wall thickness prior to the next examination.

Analysis: The inspectors determined the failure to perform an evaluation when the UT thickness measurements performed on various segments of essential service water piping exceeded the acceptance criteria was a performance deficiency. The finding was determined to be more than minor because if left uncorrected there was a potential to lead to a more significant safety concern. Specifically, by not performing the required

evaluation there was a potential to return a system to service that could exceed the design limits prior to the next inspection. The inspectors also considered the more than minor examples, specifically Example 4a, where an evaluation was not performed when required. Though the result of the licensee's evaluation demonstrated no safety concern existed, the example is more than minor because the licensee failed to perform these evaluations routinely. The inspectors reviewed eight UT examinations and identified two examples where thickness measurements exceeded the acceptance criteria. In both cases, action requests were not generated, nor were evaluations performed as required by the procedure.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, issue date 06/19/2012, "Phase I - Initial Screening and Characterization of findings." The inspectors determined the finding impacted the initiating event cornerstone because failure of the ESW system by through wall leak could lead to a loss of service water event and/or internal flooding event; and the issue adversely affected the attribute of equipment reliability. Because the licensee completed an evaluation that demonstrated the structural integrity of the piping system, the inspectors answered "No" to the IMC 0609, Significance Determination Process, Appendix A, Exhibit 1 "Initiating Events Screening Questions." Specifically, the inspectors answered "No" to the question "Did the finding involve the complete or partial loss of a support system (essential service water system) that contributes to the likelihood of, or cause an initiating event? Therefore, this finding screened as having very low safety significance (Green).

The inspectors identified a cross-cutting aspect associated with this finding in the area of human performance which states the licensee defines and effectively communicates expectations regarding procedural compliance and personnel follow procedures. Specifically, the licensee did not follow their procedure which required them to generate an action request and perform an evaluation when acceptance criteria were not met. [H.4(b)]

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Instruction, Procedures and Drawings," requires, in part, that activities affecting quality shall be performed in accordance with prescribed instructions, procedures, and drawings.

The licensee developed Procedure 12-EHP-8913-001-001 "Program for Implementing GL 89-13 Inspections," to satisfy test control requirements of 10 CFR Part 50, Appendix B, Criterion XI, in a manner consistent with the recommendations in GL 89-13. Step 3.7.4 of this procedure states, "If piping is found to be below minimum wall thickness then generate an action request per PMP-7030-CAP-001, Action Initiation." Step 3.7.5 requires an evaluation of piping below minimum wall thickness be documented in the associated CR evaluation.

Contrary to the above, as of November 28, 2012, the licensee had not performed steps 3.7.4 and 3.7.5 by generating an action request and performing an evaluation for two instances when the piping was found to be below minimum wall thickness. The licensee completed an analysis on November 29, 2012 which concluded that the pipe retained acceptable structural integrity.

Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as AR 2012-14855, and the licensee performed an

evaluation that demonstrated the structural integrity of the piping system, this violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy (NCV 05000315/2012005-01; 05000316/2012005-01, Failure to Perform an Evaluation on Essential Service Water Piping)

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

On November 29, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program simulator sample as defined in IP 71111.11

No findings were identified.

.2 Resident Inspector Quarterly Observation of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On October 29, the inspectors observed a Unit 1 downpower to 55 percent to remove foreign material from the east main feed pump. On November 3 the inspectors observed portions of the power ascension. In addition, on November 28 the inspectors observed portions of a downpower to 20 percent. These are activities that required heightened awareness or are related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;

- correct use and implementation of procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The performance in these areas was compared to pre-established operator action expectations, procedural compliance and task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11.

b. Findings

No findings were identified.

.3 Conformance with Operator License Conditions (71111.11B)

a. Inspection Scope

The inspectors reviewed the facility and individual operator licenses' conformance with the requirements of 10 CFR Part 55, Subpart C, "Medical Requirements." The inspectors reviewed the procedural guidance developed by the licensee for licensed operators to report potentially disqualifying medical conditions. The inspectors reviewed various corrective action documents associated with a failure to report a potentially disqualifying medical condition. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

Introduction: The inspectors identified a Severity Level IV violation of 10 CFR 50.9, "Completeness and Accuracy of Information," due to the submittal of incomplete or inaccurate medical information regarding a licensed operator. The submittal to the NRC was incomplete and inaccurate in a material respect because it did not include a condition that required a restriction on the SRO's license. Specifically, one SRO was prescribed a therapeutic device for treating sleep apnea but had not disclosed that condition to the licensee or the licensee's doctor; therefore, the SRO's licensee was not amended to reflect a restriction due to the medical condition.

Description: The NRC's requirements related to the conduct and documentation of medical examinations for operators are contained in Subpart C, "Medical Requirements" of 10 CFR Part 55, Operators' Licenses. Specifically, Section 55.21, "Medical Examination," requires every operator to be examined by a physician when the applicant first applies for a license, and every 2 years once receiving their license. The physician must determine whether the operator meets the requirements of Section 55.33(a)(1), i.e., the operator's medical condition and general health will not adversely affect the performance of assigned operator duties or cause operational errors that endanger public health and safety.

The applicant passed the initial license exam and was licensed on March 23, 2006. In June of 2010, the licensed SRO was diagnosed with sleep apnea and was prescribed

a continuous positive airway pressure (CPAP) device. The SRO was not aware of the need to report this condition to the licensee. In March 2012, the NRC relicensed the SRO based, in part, on the submitted Form 396, "Certification of Medical Examination." This form did not include the SRO's prescribed therapeutic device to mitigate sleep apnea.

During a requalification inspection at the facility during the week of February 27, 2012, the NRC inspector informed the licensee that a review of the licensee's checklist OHI-2071, Figure 1, "Examples of Disqualifying Conditions," appeared incomplete since it did not reference the need for licensed operators to report the use of CPAP devices. The licensee noted the comment on GT 2012-3049. For followup, the licensee informed licensed operators of the need to report if anyone was prescribed a CPAP device. One SRO then informed the licensee that he was prescribed a CPAP device. The licensee scheduled an appointment for the SRO to see the company doctor. On August 7, 2012, the licensee's doctor requested that the SRO's license be amended to include this potentially disqualifying condition and the need to mitigate the condition by the use of a therapeutic device (CPAP machine). The licensee then submitted a license amendment request for the SRO within 30 days.

The SRO did not recognize the need to disclose to the licensee a potentially disqualifying condition. Therefore, the SRO did not report this condition to the licensee nor to the medical doctor until he was reexamined on August 7, 2012. The licensee violated 10 CFR 50.9, because Form 396; "Certification of Medical Examination," submitted in March 2012, was incomplete because it did not include the condition to use therapeutic devices as prescribed.

Analysis: The licensee violated 10 CFR 50.9, completeness and accuracy of Information by failing to provide medical information that required a restriction on the license of a SRO. The failure to provide the information impacted the regulatory process because the NRC relies on licensees to report information that impacts a license holder's medical qualification to perform licensed duties. In this case, the medical condition required use of a medical device to mitigate the effects of the condition.

Section 6.4.d.1.d of the NRC Enforcement Policy, states, Level IV violation involve:

"an individual operator who met ANSI/ANS 3.4, Section 5, as certified on NRC Form 396, required by 10 CFR 55.23, but failed to report a condition that would have required a license restriction to establish or maintain medical qualification based on having the undisclosed medical condition."

Therefore, the inspectors categorized this violation as Severity Level IV because the licensed operator failed to report a condition that would have required a license restriction. In this case, the SRO required a license restriction to use the prescribed device to mitigate sleep apnea. During the period between receiving the prescription and amending the license, the operator met the restriction ultimately included in his license. The SRO did not require additional monitoring for the undisclosed medical condition.

The ROP, Manual Chapter 0612, Appendix B, requires items assessed in traditional enforcement to be screened in the ROP as well. The licensee's failure to provide



complete and accurate information to the NRC, which resulted in an incorrect licensing action in March 2012, was a performance deficiency because the licensee was expected to inform their licensed operators of the need to report potentially disqualifying conditions. Because there was no evidence that the SRO adversely affected plant operations as a result of an inadequate license condition, the inspectors concluded that the ROP issue was of minor significance. Since this issue did not include an ROP Finding, the inspectors did not include a cross-cutting aspect.

Enforcement:

Title 10 CFR 50.9 requires, in part, that information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

Title 10 CFR 55.23 requires that an authorized representative of the facility licensee shall certify the medical fitness of an applicant by completing and signing NRC Form 396. The NRC Form 396, when signed by an authorized representative of the facility licensee, certifies that a physician conducted a medical examination of the applicant and that the guidance contained in the specified edition of ANSI/American Nuclear Society (ANS) 3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," was followed in conducting the examination and making the determination of medical qualification. The licensee certified that ANS/ANSI 3.4-1983 had been followed.

Title 10 CFR 55.21 requires, in part, that an applicant for a license shall have a medical examination by a physician and the licensee shall have a medical examination by a physician every 2 years. The physician shall determine that the applicant or licensee meets requirements of Section 55.33(a)(1). Title 10 CFR 55.33(a)(1) requires, in part, that an applicant's medical condition and general health will not adversely affect the performance of assigned operator job duties or cause operational errors endangering public health and safety. ANSI/ANS 3.4-1983, Section 5.3, "Disqualifying Conditions," provides general guidance regarding, "demonstration shall include at least the specific narrative entries by the designated medical examiner and relevant aspects of medical history and physical examination."

Contrary to the above, on February 23, 2012, the licensee submitted a completed NRC Form-396 for renewal of an SRO's operator license and certified that the SRO had met the medical requirements of ANSI/ANS 3.4-1983. In order to meet the medical requirements of ANSI/ANS 3.4-1983, the SRO required use of a prescribed medical device. However, the license renewal did not include the license restriction, "shall use therapeutic device as prescribed to maintain medical qualifications." The licensed SRO had been prescribed a CPAP device on March 26, 2010, a device needed to address Section 5.3 of ANSI/ANS 3.4, 1983, "Disqualifying Conditions." Because this information required an amended license, the NRC concluded that the information originally provided was inaccurate in a material respect. The licensee submitted the license amendment on September 5, 2012. This violation is being treated as an NCV consistent with Section 2.3.2 of the Enforcement Policy. The licensee entered this issue into the corrective action program as AR 2012-10734. Submitting incomplete or inaccurate information to the NRC that resulted in a reconsideration of a regulatory position was considered a violation of 10 CFR 50.9 (NCV 05000315/2012005-02;

05000316/2012005-02; Incomplete Medical Information Provided Regarding a Licensed Operator).

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- Unit 1 and Unit 2 reactor protection system;
- High energy line break (HELB) barriers; and
- Unit 1&2 offsite power system.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

Introduction: A self-revealed finding of very low safety significance (Green) and associated NCV occurred based on two violations of 10 CFR 50 Appendix B, Criterion V, in the fourth quarter of 2012. Both violations involved licensee personnel failing to secure HELB barrier doors as required by licensee procedures. Specifically, on October 11, a worker opened the door to the Unit-1 turbine-driven auxiliary feed pump (TDAFWP) and the door failed to close due to degraded door hardware. On Dec 28, a worker failed to close the roll-up door to the Unit-1 motor-driven auxiliary feed pump door. In both cases, the failure resulted in unplanned inoperability of the AFW system.

Description: On October 11 and again on December 28, the licensee rendered AFW pumps inoperable due to failure to follow procedures for door operation.

Licensee procedures PMP-4030-001-002 and PMP-2270-DOR-001 provide requirements for door operation. These procedures require doors to be closed except for normal access unless compensatory measures are put in place.

On October 11, a worker entered the Unit-1 TDAFWP room for a routine tour. A degraded latch associated with the unused leaf of the double door failed and prevented closure of the door. The worker failed to recognize the equipment degradation and left the area with the door open several inches. Thirty-seven minutes later, another licensee employee discovered the door ajar. This employee raised the latch and closed the door. This worker reported the condition to the control room. Subsequent investigation by the licensee revealed that screws holding the latch in place had backed out, allowing the latch to prevent door closure. The licensee also concluded that use of human performance tools- e.g., self check, would have prevented the degraded HELB/fire barrier. The licensee assessed the condition under the maintenance rule and initially classified the failure as a functional failure. The inspectors concluded that the latch failure was a maintenance preventable functional failure because the degraded hardware prevented the door from performing its maintenance rule function. Additionally, maintenance on the door would have prevented the failure.

On December 28, a worker performing a routine tour of the auxiliary building opened the missile door to the Unit 2 west motor-driven auxiliary feed water (MDAFW) pump. The worker identified that the roll-up door, which normally cannot be seen, was open. The worker reported the condition to the control room and corrected the condition. Investigation by the licensee could not determine the amount of time the door was open; however, 12 hours reasonably bounds the time the door could have been open based on the key card records. Because the door protects the Unit 2 west MDAFW from the adverse effects of a HELB, the failure to close the door rendered the Unit 2 west MDAFW pump inoperable. In both cases, the inoperability was less than the 72 hour allowed outage time for AFW. Both doors also provide fire barrier functions.

Analysis: The inspectors concluded that the failure to restore HELB/Fire barriers to a functional condition was a performance deficiency that warranted a significance review since the quality procedures for door operations were not followed. The inspectors concluded that there were no willful aspects to this finding; therefore, the inspectors assessed the significance based on the Reactor Oversight Process. The performance deficiency was determined to be more than minor because it is associated with the Mitigating System Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences; and the issue adversely affected the attribute of human performance related to pre-event human error. Specifically, the licensee rendered the AFW pumps inoperable due to a failure to ensure HELB doors were closed following use, thus adversely impacting the Mitigating System Cornerstone objective of ensuring the availability of systems that respond to initiating events. Using IMC 0609, issue date 06/02/2011, the inspectors concluded that the finding impacts both mitigating systems and fire confinement. In accordance with Appendix A, the finding screened as Green for mitigating systems in accordance with IMC 0609 Appendix A, issue date 06/16/2012, Exhibit 2 because the answer to all the questions was “no.” With respect to maintenance rule, the inclusion of the October 11 issue did not result in any SSC crossing the threshold to A(1); therefore that aspect of the finding is minor.

In accordance with Attachment 0609.04, Table 3, the inspectors determined that screening under IMC0609, Appendix F, issue date 2/28/2005, "Fire Protection Significance Determination Process," was required for the fire barrier portion of the performance deficiency. For the HELB portion of the performance deficiency, screening under IMC0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," was required. Since the issues did not screen using both Appendices, the SRAs performed a phase 3, Detailed Risk Evaluation to determine the risk significance of the performance deficiency.

To evaluate this finding, the SRAs determined that four cases would require evaluation to determine the risk significance of the finding. These cases are outlined below:

Case 1 - There is a fire in the Turbine Building that renders the Unit 1 TDAFWP unavailable.

Case 2 - There is a fire in the Turbine Building that renders the Unit 2 West MDAFWP unavailable.

Case 3 - There is a HELB in the Turbine Building that renders the Unit 1 TDAFWP unavailable.

Case 4 - There is a HELB in the Turbine Building that renders the Unit 2 TDAFWP unavailable.

To evaluate the risk due to Cases 1 and 2, the SRAs determined that the finding affected the Fire Confinement finding category specified in IMC0609, Appendix F, Table 1.1-1. Since for both affected areas (i.e., the Unit 1 TDAFWP and the Unit 2 West MDAFWP) the area outside the rooms opened into the Turbine Building, a fire frequency of 8E-2/yr (per Table 1.4.2 of IMC0609, Appendix F) was used. To bound the risk evaluation an exposure time of one day was used in the evaluation and a loss of offsite power (LOOP) initiating event was assumed to occur.

The D.C. Cook SPAR model version 8.20 and Systems Analysis Programs for Hands-on Integrated Reliability Evaluations (SAPHIRE) version 8.0.8.0 software was used to obtain the Conditional Core Damage Probability (CCDP) for a LOOP initiating event with a failure of either the TDAFWP or the West MDAFWP. The Unit 1 West MDAFWP was used as a surrogate for the Unit 2 West MDAFWP. From the SPAR model, the following CCDPs were obtained:

Initiating Event	CCDP Value
LOOP with failure of TDAFWP	4.4E-5
LOOP with failure of West MDAFWP	5.5E-5

Case 1 Risk:

The risk of the finding (delta Core Damage Frequency or  $\Delta$ CDF) for Case 1 was evaluated to be:

$$\Delta\text{CDF} = [8\text{E-}2/\text{yr}] \times [1/365] \times [4.4\text{E-}5] = 9.6\text{E-}9/\text{yr}$$

Case 2 Risk:

The risk of the finding ( $\Delta\text{CDF}$ ) for Case 2 was evaluated to be:

$$\Delta\text{CDF} = [8\text{E-}2/\text{yr}] \times [1/365] \times [5.5\text{E-}5] = 1.2\text{E-}8/\text{yr}$$

To evaluate the risk due to Cases 3 and 4, a steam line break outside containment was assumed to occur. The SRAs determined from the Cook SPAR model that the frequency of a steam line break outside containment was  $7.70\text{E-}3/\text{yr}$ . Using the Cook SPAR model, the CCDP for a steam line break with a failure of either the Unit 1 TDAFWP or the Unit 2 West MDAFWP was evaluated to be  $1.1\text{E-}3$ . To bound the risk evaluation an exposure time of one day was used in the evaluation.

Case 3 Risk:

The risk of the finding ( $\Delta\text{CDF}$ ) for Case 3 was evaluated to be:

$$\Delta\text{CDF} = [7.70\text{E-}3/\text{yr}] \times [1/365] \times [1.1\text{E-}3] = 2.3\text{E-}8/\text{yr}$$

Case 4 Risk:

The risk of the finding ( $\Delta\text{CDF}$ ) for Case 4 was evaluated to be:

$$\Delta\text{CDF} = [7.70\text{E-}3/\text{yr}] \times [1/365] \times [1.1\text{E-}3] = 2.3\text{E-}8/\text{yr}$$

The final  $\Delta\text{CDF}$  associated with the finding is obtained as the sum of the delta CDF for Cases 1, 2, 3, and 4 or:

$$\text{Final } \Delta\text{CDF} = [9.6\text{E-}9/\text{yr}] + [1.2\text{E-}8] + [2.3\text{E-}8/\text{yr}] + [2.3\text{E-}8] = 6.8\text{E-}8/\text{yr}$$

Based on the Detailed Risk Evaluation, the inspectors determined that the finding was of very low safety-significance (Green).

The inspectors concluded that this finding was associated with a cross-cutting aspect in the work practices component of the human performance cross-cutting area.

Specifically, licensee personnel did not utilize human error prevention techniques to ensure the HELB/Fire doors were properly secured following passage through the doors. (H.4(a)).

Enforcement: 10 CFR 50 Appendix B requires, in part, that activities affecting quality be accomplished in accordance with instruction procedures or drawings. The licensee developed quality procedures PMP-2270-DOR-001 and PMP-4030-001-002 to prescribe instructions for operating doors. Both procedures require compensatory measures if HELB/fire doors are opened for other than normal passage. Contrary to this requirement, on October 11 and on December 28, the licensee degraded the HELB/fire barrier by leaving the doors ajar without establishing compensatory measures. Upon error recognition, the licensee promptly re-established the HELB/fire barrier. The violation existed for approximately 37 minutes in one example and 12 hours in the second example and reduced the reliability of the AFW system. The licensee addressed recurrence through reinforcement of requirements to check doors closed. Because this

violation was of very low safety significance and it was entered into the licensee's corrective action program as ARs AR-2012-12704 and AR-2012-16126 this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000315/2012005-03; 05000316/2012005-03, Failure to Maintain HELB and Fire Barriers). These issues are entered into the CAP as AR-2012-12704 and AR-2012-16126.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Planned work on the U2 condensate storage tank to hot well makeup line, security battery cell replacement and emergent plant process computer work on November 8 and 9, 2012;
- emergent work associated with N train battery charger trip; and
- emergency service water outage and emergent steam generator (SG) level indicator repair.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

Specific documents reviewed during this inspection are listed in the Attachment to this report. These maintenance risk assessments and emergent work control activities constituted three samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Unit 1 SGs due to feed strainer failure;
- SG level indicator failure;

- Unit 2 engineered safety feature ventilation system damper failure; and
- plant process computer for derived thermal power.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and UFSAR to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted four samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following modification:

- EC-51906, modify vent line for EDG fuel oil storage tank 12-TK-47-AB (permanent plant modification); and
- temporary modifications to Unit 1 east feed pump.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 safety evaluation screening against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modification was installed as directed and consistent with the design control documents; the modifications operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

This inspection constituted one temporary modification sample and one permanent plant modification sample as defined in IP 71111.18-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- Unit 2 SG power operated relief valve, 2-MRV-223, controller replacement;
- Unit 1 AB battery cell replacement;
- Unit 1 AB battery charger preventative maintenance;
- Unit 1 feed pump and feed strainer following strainer replacement; and
- Unit 2 west residual heat removal heat exchanger outlet flow control valve electronic manual loader controller replacement (2-RU-17).

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted five post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:



- Unit 2 reactor coolant system leak rate test (reactor coolant system leak detection);
- Unit 1 distributed ignition system surveillance (routine);
- Unit 1 nuclear instrumentation power range channel operational test and calibration (routine);
- Unit 2 ice condenser intermediate deck door surveillance (routine); and
- Unit 2  $\Delta T/T^{AVG}$  protection sets 1-4 channel operational test and calibration surveillance (routine).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- the effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted four routine surveillance testing samples and one reactor coolant system leak detection inspection sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

**Cornerstone: Emergency Preparedness**

1EP4 Emergency Action Level and Emergency Plan Changes (IP 71114.04)

a. Inspection Scope

The Nuclear Security and Incident Response headquarters staff performed an in-office review of the latest revisions of the Emergency Plan and various Emergency Plan Implementing Procedures (EPIPs) located under ADAMS Accession Number ML120481718 as listed in the Attachment.

The licensee transmitted the EPIP revisions to the NRC pursuant to the requirements of 10 CFR Part 50, Appendix E, Section V, "Implementing Procedures." The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

This inspection constituted one emergency action level and emergency plan changes sample as defined in IP 71114.04-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine unannounced licensee emergency drill on December 4, 2012, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Emergency Operations Facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare inspector-observed weaknesses with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

2. **OTHER ACTIVITIES**

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness**

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage performance indicator (PI) for D.C. Cook Nuclear Power Plant, Units 1 and 2, for the period from the third quarter 2011 through the second quarter 2012. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, was used. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports and NRC Integrated Inspection Reports for the period of the third quarter 2011 through the second quarter 2012 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two reactor coolant system leakage samples as defined in IP 71151-05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: identification of the problem was complete and accurate; timeliness was

commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 40A2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of April 2012 through September 2012, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, and self assessment reports. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective

actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted a single semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.4 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of operator workarounds. The documents listed in the Attachment to this report were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds. Finally, the inspectors observed routine tours by the operations department to check for potentially unidentified operator workarounds or burdens.

This review constituted one operator workaround annual inspection sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.5 Selected Issue Follow-Up Inspection: Appendix R Coordination Study Deficiency

a. Inspection Scope

The inspectors selected the following apparent cause evaluation for an in-depth review:

- AR 2012-7848-3, 10CFR50 Appendix R Coordination Study Deficiency

The inspectors discussed the evaluation and associated corrective actions with licensee personnel and verified the following attributes while reviewing the apparent cause evaluation:

- complete and accurate problem identification in a timely manner commensurate with its safety significance and ease of discovery; extent of condition, generic implications, common cause and previous occurrences were considered;
- problem resolution was classified and prioritized commensurate with safety significance;
- apparent and contributing causes were identified; and
- corrective actions were appropriately focused.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 Unit 2 High Pressure Turbine Control Valve Controller Failure and Subsequent Steam Generator Water Level Oscillations

a. Inspection Scope

The inspectors reviewed the plant's response to a failed servo position controller mechanism on the Unit 2 high pressure turbine control valve D on November 30, 2012, which caused a subsequent rise in steam demand and rapid lowering of  $T^{avg}$  which resulted in an 8 percent increase in thermal power. Prior to the servo failure, reactor power was approximately 23 percent. Following automatic feed water control stabilization, SG 4 Feedwater Regulating Valve continued to oscillate slightly. The control room operators responded by placing the SG 4 Feedwater Regulating Valve and west main feed pump in manual control to stabilize water level in the generator. Upon stabilizing level, the operators returned the SG 4 Feedwater Regulating Valve to automatic control. The inspectors noted that water level in SG #4 level peaked at 66 percent during stabilization, which is within the 1% SG Hi Hi level set point. Consequently, if level had reached the set point stated above, a subsequent reactor trip would have occurred. The Licensee has entered this issue into the corrective action program as AR 2012-14938 and is currently performing an Apparent Cause Evaluation. Therefore, the inspectors plan on reviewing the associated Apparent Cause Evaluation once it has been completed and will document their assessment in a future inspection report. Documents reviewed in this inspection are listed in the Attachment to this report.

This event follow-up review constituted one sample as defined in IP 71153-05.

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report 05000316/2012-001-00, Containment Divider Barrier Seal Inoperable During Plant Operation

The inspectors reviewed the events and circumstances surrounding this Licensee Event Report (LER) in which licensee personnel identified deficiencies with the Unit 2 containment divider barrier seal during surveillance testing while the plant was in Mode 6 during a refueling outage. Specifically, on March 22, 2012, licensee personnel identified one seal mounting bolt with a loose nut and on April 2, 2012, licensee personnel identified two shallow nicks in one area of the seal material.

The inspectors reviewed the apparent cause evaluation, the past operability determination, the associated corrective work orders and control room logs to verify that the event was accurately reported. The past operability concluded that the identified deficiencies rendered the seal barrier inoperable. Because it could not be positively determined when the deficiencies occurred, the evaluation assumed that the seal barrier was inoperable during plant operation in Modes 1 through 4 during the previous operating cycle. If the seal barrier was inoperable with the plant in Modes 1 through 4, then TS 3.6.13 required the seal to be restored to an operable condition within 1 hour. If the seal is not restored to an operable condition within the 1 hour time limit then the plant must be placed in Mode 3 within 6 hours and to Mode 5 within 36 hours. Because these deficiencies were present during the previous operating cycle, while the plant was in Modes 1, the required TS actions were not taken. Consequently, this issue constituted a noncompliance with TS and the licensee reported this as a condition prohibited by the plant's TS in accordance with 10 CFR 50.73(a)(2)(i)(B).

The past operability determination also evaluated the impact from the deficiencies with respect to the seal barrier functionality. The evaluation concluded that the divider barrier seal was fully functional and therefore the deficiencies did not have an effect on nuclear plant safety. The divider barrier seal was fully intact and would have continued to fulfill its function during a design basis event; and there was no adverse impact to the barrier integrity cornerstone. Therefore, the inspectors concluded that this violation of TS 3.6.13 constitutes a violation of minor significance and is not subject to enforcement action in accordance with Section IV of the NRC's Enforcement Policy.

For corrective actions, the licensee completed corrective maintenance to tighten the loose fastener and to replace the seal that had the two shallow nicks prior the plant entering Mode 4 following the refueling outage. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

4OA5 Other Activities

.1 Temporary Instruction -2515/182 - Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks

a. Inspection Scope

Leakage from buried and underground pipes has resulted in ground water contamination incidents with associated heightened NRC and public interest. The industry issued a guidance document, NEI 09-14, "Guideline for the Management of Buried Piping Integrity," (ADAMS Accession No. ML1030901420) to describe the goals and required

actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, NEI issued Revision 1 to NEI 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML110700122), with an expanded scope of components which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued Temporary Instruction (TI)-2515/182 "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks," to gather information related to the industry's implementation of this initiative.

The inspectors reviewed the licensee's programs for buried pipe, underground piping and tanks in accordance with TI-2515/182 to determine if the program attributes and completion dates identified in Sections 3.3 A and 3.3 B of NEI 09-14 Revision 1 were contained in the licensee's program and implementing procedures. For the buried pipe and underground piping program attributes with completion dates that had passed, the inspectors reviewed records to determine if the attribute was in fact complete and to determine if the attribute was accomplished in a manner which reflected good or poor practices in program management.

Based upon the scope of the review described above, Phase I of TI-2515/182 was completed.

b. Observations

The licensee's buried piping and underground piping and tanks program was inspected in accordance with Paragraphs 03.01.a through 03.01.c of TI-2515/182 and was found to meet all applicable aspects of NEI 09-14 Revision 1, as set forth in Table 1 of the TI.

c. Findings

No findings were identified.

.2 (Closed) NRC Temporary Instruction 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter 2008-01)"

a. Inspection Scope

During an earlier inspection period, the inspectors verified the licensee implemented or was in the process of implementing the commitments, modifications, and programmatically controlled actions described in the licensee's response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." This earlier activity was conducted in accordance with TI 2515/177 and was documented in IR 05000315/2012008; 05000316/2012008. The TI remained opened for D.C. Cook Nuclear Power Plant because, at the conclusion of that inspection period, questions remained unresolved due to questions regarding reduced inventory operations and the use of computer software for a past operability determination which was not benchmarked for the intended application.

During this inspection period, the inspectors determined the questions associated with the use of computer software for a past-operability determination will be addressed by unresolved item (URI) 05000315/2012008-09; 05000316/2012008-09, "Computer



Program Used for Operability Evaluation Was Not Benchmarked.” In addition, the licensee provided additional information regarding reduced inventory operations and the inspectors had no further questions. The inspectors determined the objectives of this TI were met based on the inspection results documented in IR 05000315/2012008; 05000316/2012008 and tracking the resolution of the unresolved questions as an URI. Therefore, this TI is considered closed for D.C. Cook Nuclear Power Plant.

b. Findings

No findings were identified.

.3 (Closed) NRC Temporary Instruction 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns

a. Inspection Scope

The inspectors verified that licensee’s walkdown packages for the Unit 1 and 2 west 4kV switchgear room walk-in door curbs, door thresholds and rollup door curbs, Turbine Room Sump to Turbine Room Sump overflow-vault backflow preventer, 12-DR-129, Flapper (check) valve, lakeshore sheet pile wall (storm/sea wall) and spent fuel pool contained the elements as specified in NEI 12-07 Walkdown Guidance document.

The inspectors accompanied the licensee on their walkdown of the Unit 2 west 4kv switchgear room walk-in door curb, door threshold and rollup doors and spent fuel pool and verified that the licensee confirmed the following flood protection features:

- Incorporated Passive features such as berm walls; building floors, ceilings, and walls; instrumentation panels; electrical junction boxes; penetrations; floor drains; and cable tray ways; and
- Incorporated Active features such as watertight doors and hatches, sump pumps, and check valves in floor drains.

Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspections for indications of degradation that would prevent its credited function from being performed were completed. Critical structures, systems, and components’ dimensions were measured. The available physical margin to flood height, where applicable, was determined. Flood protection feature functionality was determined using visual observation and by reviewing applicable plant documents.

The inspectors independently performed a walkdown of the lakeshore sheet pile wall (storm/sea wall) and verified the following flood protection features were in place and able to perform their intended functions:

- The effects of elevated water levels and severe weather conditions would not impair support functions or would not impede performing necessary actions given the weather conditions;
- Visual inspection of the flood protection feature was performed and documented; and
- Functionality was determined using visual observation and review of design documents.

The inspectors verified that noncompliances with current licensing requirements, and issues identified in accordance with the 10 CFR 50.54(f) letter, Item 2.g of Enclosure 4, were entered into the licensee's corrective action program. In addition, issues identified in response to Item 2.g that could challenge risk significant equipment and the licensee's ability to mitigate the consequences will be subject to additional NRC evaluation.

b. Findings

No findings were identified.

.4. (Closed) NRC Temporary Instruction 2515/188, Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

The inspectors accompanied the licensee on their seismic walkdowns of Unit 1 & 2 AB EDG rooms located in the turbine building 587 elevation on September 10, 2102, Unit 2 containment annulus located inside containment building on September 13, 2012 accessed from 612 elevation and spent fuel pool heat exchanger walkdowns located in auxiliary building on 609 elevations on September 17, 2012. The inspectors verified that the licensee confirmed that the following seismic features were free of potential adverse seismic conditions:

- Anchorage was free of bent, broken, missing or loose hardware;
- Anchorage was free of corrosion that is more than mild surface oxidation;
- Anchorage was free of visible cracks in the concrete near the anchors;
- Anchorage configuration was consistent with plant documentation;
- SSCs will not be damaged from impact by nearby equipment or structures;
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment;
- Attached lines have adequate flexibility to avoid damage;
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area;
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area; and
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding).

The inspectors independently performed their walkdown and verified that the Unit 1 & 2 east and west essential service water pumps and various support equipment adhered to the above criteria and compared their notes to those generated by the licensee.

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation.

Additionally, inspectors verified whether there were items that could allow the spent fuel pool to drain down rapidly and if they had been added to the SWEL and walked down by the licensee.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 24, 2013, the inspectors presented the inspection results to J. Gebbie and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The results of the Conformance with Operator License Conditions inspection were discussed with Mr. M. Scarpello, Regulatory Affairs Manager, on November 9, 2012.
- On November 30, 2012, the inspectors presented the Heat sink and TI 2515/182 inspection results to Mr. J. Gebbie, and other members of the licensee staff. The licensee acknowledged the issues presented.
- The results of a TI 2515-177 inspection with Mr. M. Carlson on December 3, 2012.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

M. Carlson, Vice President of Site Support Services  
J. Gebbie, Site Vice President  
P. Kohn, Buried Pipe Program Owner  
J. Newmiller, Licensing Engineer  
K. O'Conner, Program Engineering Manager  
S. Reyes, GL 89-13 Program Owner  
J. Ross, Plant Engineering Director  
M. Scarpello, Regulatory Affairs Manager  
C. Vanderzwaag, ESW System Manager  
R. West, Licensing Activity Coordinator (Compliance)

#### Nuclear Regulatory Commission

A. M. Stone, Chief, Engineering Branch 2

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Opened

05000315/2012005-01; 05000316/2012005-01	NCV	Failure to Perform an Evaluation on Essential Service Water Piping (1R07)
05000315/2012005-02; 05000316/2012005-02	NCV	Not Reporting the Use of CPAP Devices by Licensed Operators (1R11.3)
05000315/2012005-03; 05000316/2012005-03	NCV	Failure to Maintain HELB and Fire Barriers (1R12)

#### Closed

05000315/2012005-01; 05000316/2012005-01	NCV	Failure to Perform an Evaluation on Essential Service Water Piping (1R07)
05000315/2012005-02; 05000316/2012005-02	NCV	Not Reporting the Use of CPAP Devices by Licensed Operators (1R11.3)
05000315/2012005-03; 05000316/2012005-03	NCV	Failure to Maintain HELB and Fire Barriers (1R12)
05000316/2012001-00;	LER	Containment Divider Barrier Seal Inoperable During Plant Operation (4OA3.2)

#### Discussed

05000315/2012008-09; 05000316/2012008-09	URI	Computer Program Used for Operability Evaluation Was Not Benchmarked (4OA5.2)
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## LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R01 Adverse Weather Protection

- 12-IHP-5021-EMP-016, Pyrotenax Heat Trace Maintenance, November 8, 2012
- 12-IHP-5040-EMP-004, Plant Winterization and De-Winterization, November 9, 2012
- AR 2011-0919, 12-DFPWS-1B-13 Found Tripped
- AR 2011-3900, Sub Panel 12-WST, Heater Needs to Be Replaced
- AR 2012-12406, Damaged Heat Trace Termination Box
- AR 2012-13848, 12-HV-FPH-UHE-2 Will Not Run Properly
- AR 2012-13851, While Performing Winterization per 12-IHP-5040-EMP-004, 12-H
- AR 2012-14216, Bad Inputs to SDG#1 Engine Monitor
- PMP-5055-001-001, Winterization/summarization Walkdown Checklist, November 9, 2012
- Seasonal Readiness Affirmation, Letter from Bobby Norrick to Shane Lies, November 12, 2012

### 1R04 Equipment Alignment

- 12-MHP-5021-016-001, Component Cooling Water Pump Maintenance, Revision 11
- 12-OHP-4021-019-001, Operation of the Essential Service Water System, Revision 49
- 1-OHP-4021-032-008CD, Operating DG1CD Subsystems, Revision 16
- 2-OHP-4012-056-001, Filling and Venting Auxiliary Feedwater System, Revision 026
- 2-OHP-4021-016-001, Filling and Venting the Component Cooling Water System, Revision 026
- 2-OHP-4022-016-004, Loss of Component Cooling Water
- 2-OHP-4022-055-003, Loss of Condensate to Auxiliary Feedwater Pumps, Revision 009
- 2-OHP-4030-216-020E, East component Cooling Water Loop Surveillance Test, Revision 20
- 2-OHP-4030-216-020W, West Component Cooling Water Loop Surveillance Test, Revision 18
- AR 2011-12098, 1CD 1R 200 drop per minute Leak from Jacket Water Outlet Gooseneck Lower Flange, October 16, 2011
- AR 2012-12105, Water Pooling Around U2 CST
- AR 2012-12927, 20-25 Gallon Per Day Lowering Level in CCW Surge Tank
- AR 2012-13112, 2-NTA-251, PZR Water Temp. is at 670F Causing CR Alarm
- AR 2012-13169, Severe Degradation Threatens NEWS Pipes, Blowdown and CST
- AR 2012-13183, 2-BLP-130 Slowly Drifting Low
- AR 2012-13212, Severe Unit 2 CST Expansion joint Damage
- AR 2012-13216, Dry Boric Acid on 2-CS-300E
- AR 2012-13223, U2 West CCW O/B Seal Leaking Steady Stream with Pump Idle
- AR 2012-13704, 1-FFI-220 Indicates Flow with No Pumps Running
- AR 2012-13767, Valve found Out of Position
- AR 2012-13969, Rear Bank Speed Indication on 2 CD EDG Reads Low
- AR 2012-14171, 2-PP-4 TDAFP Governor Oil Level is Out of Sight Glass High
- AR 2012-5653, Broken Pipe Support on U1 CD EDG Engine Front Bank, May 2, 2012
- AR 2012-7879, 2-ESW-240 Has Small Amount of Leak By From Its Closed Seat

- AR 2012-8563, Oil Leaking from Top of 1-QT-116-CD (CD EDG Lube Oil Heater), July 13, 2012
- DB-12-EDG, Design Basis Document for the Emergency Diesel Generators, Revision 6
- DB-12-EDGS, Design Basis Document for the Emergency Diesel Generator Support Systems, Revision 4
- MD-12-CST-002-N, Operation of the Auxiliary Feedwater System Using the Condensate Storage Tank of the Other Unit, June 1, 2000
- OP-1-5151C-53, Flow Diagram Emergency Diesel Generator "CD" Unit 1, Revision 53
- OP-1-5151D-67, Flow Diagram Emergency Diesel Generator "CD" Unit 1, Revision 67
- OP-2-51061-55, Flow Diagram and Feedwater, Unit 2, October 6, 2011
- OP-2-5106A-55, Flow Diagram Aux Feedwater Unit 2, October 6, 2011
- OP-2-5107-71, flow Diagram Condensate Unit 2, April 20, 2012
- OP-2-5135A-40, Flow Diagram CCW Safety Related Loads, January 4, 2007
- OP-2-5251-15, Arrangement of Piping ESS & Non-ESS Service Water Feed Water Systems Steam to Aux. Feed Pump Turb. Demin WTR STM Gen Blow-Down Drain Unit 2, December 14, 2004
- WO 55391841, 1CD 1R 200 dpm JW Leak from Outlet Gooseneck, closed July 7, 2012

#### 1R05 Fire Protection

- AR 2012-11730, Bent Fire Extinguisher Hooks in the Control Rooms
- AR 2012-13102, Makeup Plant Relay Failure Resulting in Smoking/Smoldering;
- AR 2012-6800, NRC Question – CO2 Switch Labels
- Fire Hazards Analysis, Revision 15
- Fire Pre-Plans Volume 1, September 14, 2012

#### 1R06 Flood Protection

- DB-12-ESW, Essential Service Water Design Basis Document, Revision 7
- DCC-PV-1222-N, Flood Protection ESW Pipe Tunnel , June 12, 1990
- SD-061206-001, Flooding Evaluation Report for D.C. Cook Nuclear Power Plant, Revision 2

#### 1R07 Heat Sink

- 12-EHP-5025-TMP-002, Temperature Monitoring Program, Revision 004
- 12-EHP-8913-001-001, Program for Implementing GL 89-13 Inspections, Revision 2
- 12-EHP-8913-001-002, Heat Exchanger Inspection, Revision 7
- 12-OHP-4021-019-001, Operation of the Essential Service Water System, Revision 49
- 12-OHP-4022-001-010, Severe Weather, Revision 009
- 12-OHP-5030-057-001, Screen House Vulnerability Determination, Revision 20
- 12-THP-6020-CHM-313, Chlorination, Revision 22
- 1-OHP-4021-057-001, Circulating Water System Operation, Revision 39
- 1-OHP-4021-057-002, Placing In/removing From Service Circulating Water Deicing System, Revision 19
- 1-OHP-4024-123, Annunciator #123 Response, Circulating Water, Revision 19
- 1-OHP-4030-219-022-FV, ESW Flow Verification, performed on October 17, 2011
- 1-WFI741, UT Thickness Measurement Data Report, February 10, 2010
- 2-OHP-4024-204, Annunciator #204 Response: Essential Service Water and Component Cooling, Revision 24
- 2-OHP-4030-219-022-FV, ESW Flow Verification, performed on April 16, 2012
- 2WRFV774, UT Thickness Measurement Data Report, February 15, 2010

- 2WRV763, UT Thickness Measurement Data Report, January 13, 2010
- 2WRV763, UT Thickness Measurement Data Report, January 13, 2010
- 2WRV764, UT Thickness Measurement Data Report, November 10, 2008
- 2WRV773, UT Thickness Measurement Data Report, January 14, 2010
- AR 2011-0463, U2 ESW Pump Discharge Strainer Clogged on Pump Start
- AR 2011-0619, Loss of ESW Header Pressure on Pump Swap
- AR 2011-10958 1-HE-15W, West CCW HX Zebra Mussel Shells
- AR 2011-12175, Increased Silt and Mussels Noted During Sampling
- AR 2011-12290, Inspection of ESW Pumps Vortex Suppressors
- AR 2011-9436, Heat Exchanger Fouling,
- AR 2012-10993, Inadequate Causal Evaluation
- AR 2012-11193, Evaluate Completeness of GL 89-13 Program
- AR 2012-11462, Pinhole Leak From ESW Outlet Piping on U-2 West CCW Hx
- AR 2012-13930, Control Room Ventilation UFSAR & DBD Not Updated by EC-51402
- AR 2012-14719, 2012 Heat Sink - Procedure Revisions
- AR 2012-14756, 2-ESW-170S Flange Bolt Potential for Binding
- AR 2012-14855, Pipe Wall Issues Not Entered into CAP
- AR 2012-14863, ESW Bay Cleaning and Inspection Criteria and Frequency
- AR 2012-1915, GL 89-13 Inspection Results of 1-HV-AFP-T1AC
- AR 864657, Pitting on Tube Sheet of 2-HE-64N Chiller Condenser
- Circulating Water System Health Reports 1<sup>st</sup> and 2<sup>nd</sup> Quarters 2012
- E-531-S1, UT Thickness Measurement Data Report, October 15, 2010
- E-531-S2, UT Thickness Measurement Data Report, October 15, 2010
- E-621-O, UT Thickness Measurement Data Report, April 7, 2010
- EHI-5054-HXM, Heat Exchanger Monitoring, Revision 2
- EHI-8913, Program for Implementing Generic Letter 89-13, Revision 2
- ENVI-8913, Zebra Mussel Monitoring and Control Program, Revision 9
- Essential Service Water System Health Reports 1<sup>st</sup> and 2<sup>nd</sup> Quarters 2012
- Generic Letter 89-13 Program Health Reports 1<sup>st</sup> and 2<sup>nd</sup> Quarters 2012
- GL 89-13 Program Basis Document, Revision 4
- GT 2012-14885, PM Change Request Action per PMP-5030-001-003, November 29, 2012
- Heat Exchanger Program Basis Document, Revision 2
- IST Vibration Trends for ESW Pumps, 2010-2012
- MD-12-HV-032-N, Control Room Temperature Historical Data Evaluation, Revision 12
- MD-12-MS-068-N, Tube Plugging Allowances for Safety-Related Heat Exchangers, Revision 1
- MD-2-CA-010-N, Backup Control Air Supply Requirements for Unit 2 ESW Strainer Backwash Valves, Revision 0
- MDS-607, Heat Exchanger Tube Plugging, Revision 10
- PMP-5030-001-005, Essential Service Water System Inspection, Revision 2
- R20029OP, Sonar Inspection of Forebay, August 14, 2009
- RU11-024, Forebay Bathymetric Survey with Dual-Axis Sonar, May 14, 2011
- WO 55225659-02, Control Room AC Liquid Chiller Condenser 2-HE-64S, March 20, 2007
- WO 55239413-02, Control Room AC Liquid Chiller Condenser 1-HE-64S, December 11, 2007
- WO 55274445-01, Perform UT Up/Downstream of 2-WRV-77, January 12, 2010
- WO 55338300, Control Room AC Liquid Chiller Condenser 2-HE-64S, February 16, 2010
- WO 55354762-02, Control Room AC Liquid Chiller Condenser 1-HE-64S, December 14, 2010
- WO 55363633, Diving in the Screenhouse & CW Condenser Tunnel Inlet, to Include ESW, October 21, 2011
- WO 55376503-01, Unit 2 Diving Inspection, May 30, 2012

- WO 55376503-63, Vortex Suppressor Clean and Inspect, April 2, 2012
- WO 55377715-01, Unit 2 Inspect and Clean ESW, April 2, 2012
- WOT 55410990-18/23, Ultrasonic Examination for Thickness Measurements Test Report, September 19, 2012

#### 1R11 Licensed Operator Requalification Program

- 2-OHP-4021-001-003, Power Reduction, Revision 46
- AR 2012-10734 - Licensed Operator Medical Condition Late Report, August 30, 2012
- GT 2012-3049 - Minor Comments from NRC Debrief for 71111.11, March 21, 2012
- OHI-2071; Reporting Reassignment, Termination, and Conditions Potentially Affecting Performance of License Duties, Revision 12
- Licensed Operator Requalification, RQ-S-3706-U1-T1, Period 3705 UT Training Scenario 1, November 28, 2012

#### 1R12 Maintenance Effectiveness

- AR 2010-3532, Xfmr 201 AB Neutral/Ground overcurrent fault
- AR 2011-0194, Out of Tolerance for 1-TB-411C and 1-TB-411D
- AR 2011-11447, Loose Wire Found on Unit 1 Protection Set 2 Configuration Control Card
- AR 2011-14334, Degraded Door 2-DR-AUX342 Needs Replacement, Dec 9, 2011
- AR 2011-1920, Momentary loss of EP
- AR 2011-3148, 1-TR101CD Load Tap changer not working in Auto, Perform MRULE functional failure evaluation
- AR 2011-4213, Compressor 2-B2-COMP-1 was found miswired
- AR 2011-7727, U-2 Main transformer phase 2 fan 1 has debris caught in fan
- AR 2012-13501m PMP-4030-001-002, Compensatory Measures for HELB
- AR 2012-14045, Conflicting Maintenance Rule info for new volts/hertz relays
- AR 2012-5744, U2 Generator Trip/Turbine Trip which caused a reactor trip
- AR 2012-8883, MRULE Unavailability Time Exceeded for Offsite Power
- AR-2010-0497, TRM Fire/HELB Door found Unlatched, March 3, 2010
- AR-2012-0497, TRM Fire/HELB Door Found Unlatched, March 3, 2010
- AR-2012-12704, TDAFP was Being Held Open About 5 Inches Due to Malfunction
- AR-2012-12704, TDAFP was Held Open About 5 Inches Due to a Malfunction
- AR-2012-7467, 2-DR-Aux318/DRT246 AB
- EC-0000051009, Replace Gas Analyzer 1-GSI-800 for Unit 1 Main Transformer, December 2, 2011
- GT 2011-1246, 345 kV switchyard upgrades required
- GT 2011-14976, Assessment for HELB Program, December 29, 2011
- GT 2011-14976, Self-Assessment Evaluation Per PMP 7034 SAP-001, Assessment for HELB Program, December 29, 2011
- Maintenance Rule (a)(1) Action Plan, Offsite Power, August 15, 2012
- Maintenance Rule a(1) Action Plan, Reactor Protection System RPS-02, August 4, 2011
- Maintenance Rule Scoping Document, Reactor Protection System, Revision 2
- Maintenance Rule Scoping, Offsite Power System, Revision 3
- Offsite Power System Health Reports, 2010 – 2012
- PMI-5035, Maintenance Rule Program Rev 14
- PMP-4030-001-002, Administrative Requirements for Ventilation Boundary and High Energy Line Break Barriers, rev 17
- PMP-5040-MOD-007, Engineering Modifications, Revision 021



- System Health Report, Unit 1 and Unit 2 Reactor Protection System, 4<sup>th</sup> quarter 2010 through 3<sup>rd</sup> quarter 2012
- WO 55322410-01, MTSY (12-TR-1) Replace 34.5KV/12KB Lighting Arrestors, July 22, 2012
- WO 55339775-01, 2-TR201CD, Investigate and Repair Cause for Fan Failure, September 17, 2011
- WO 55351353-08, MTE;2-H1103; Reterm New Cable, September 17, 2011
- WO 55361983 33, MTE; 2-TR201 AB: 2-H1107: Reterm Cable, June 11, 2011
- WO 55375440-11, MTE 1-TR-Main (EC-51009) Install with Vendor On-Line Monitor, April 1, 2012
- WO 55375440-15, (PH) Install On-Line Transformer Monitor Heat Trace, April 1, 2012
- WO 55378049, Replace 1-I2V-R7N5S9, April 14, 2012
- WO 55379344, Replace 2-I2V-R9N5S9, August 4, 2012
- WO 55379348, Replace 2-I2V-R12N6S10 Signal Converter, May 12, 2012
- WO 55379349, Replace 2-I2V-R5N5S9, June 9, 2012
- WO 55379351, Replace 2-I2V-R8N5S10 Signal Converter, April 14, 2012
- WO 55382815, Replace 2-I2V-R12N5S Signal Converter, August 4, 2012
- WO 55382817, Replace 2-I2V-R3N5S10, April 14, 2012
- WO 55384069, Replace 2-LPS-90, August 4, 2012
- WO 55384073, Replace 1-LPS-92, March 3, 2012
- WO 55384077, Replace 1-LPS-91, March 3, 2012
- WO 55411351-07, MRTI, Investigate US DC Ground Detector Relay, 2-64-PBG-CD, November 6, 2011

#### 1R13 Maintenance Risk Assessments and Emergent Work Control

- 12-OHP-4021-082-031, Security UPS Operations, Revision 6
- 2-OHP-4021-082-015, Operation of the N Train battery System, Revision 10
- AR 2012-13169, Severe Degradation Threats NESW Pipes, Blowdown and CST
- AR 2012-13924, 2-C-168C Will Not Operate
- AR 2012-14050, U1 Containment Temp Point 1-ETR-145 Failed HI
- AR 2012-14054, U-2 LEFM and Venturi Power in Hi Alarm
- Control Room Logs, November 8-9; November 19-21
- IPTE Briefing Package, Unit 2 Containment Entry
- PMP-2291-OLR-001, Online Risk Management, Part 1, Configuration Risk Assessment, November 8-9, 2012

#### 1R15 Operability Determinations and Functionality Assessments

- 2-EHP-4030-228-228B, 2-HV-AES-2 Engineered Safety Feature Ventilation Surveillance, Revision 019
- 2-OHP-4021-082-015, Operation of the N Train Battery System, Revision 10
- AR 2012-13481, East Main feed Pump (1-PPE-1E)
- AR 2012-14521, U02 N Train Charger A Output breaker tripped
- AR 2012-14933, No AR Written for Unit 2 Down Power
- AR 2012-14939, Leak on 2-BLP-130-V1
- AR 2012-15096, 2-BC-A failed surveillance
- AR 2012-15395, 2-HV-AES-2 HEPA Filter D/P is high at 2.4 inches H2O
- AR 2012-15414, 2-BC-B Surveillance Failure
- AR 2012-15455, 2-HV-VD-AES-2 Damper position locking device threads failing
- AR 2-12-15499, 2-HV-VD-AES-2 Damper position locking device threads fail
- Foreign Material Intrusion recovery Plan template, November 1, 2012

- MD-12-HV-023-N, Auxiliary Building Engineered Safety Feature Ventilation System (AES) Fan Pressure Drop, (1-HV-AES-1, 2 & 2-HV-AES-1, 2), Revision 0
- PPC Analog Data point Graphs for LEFM Total Feedwater Flow, Blowdown Flow, LEFM Total Thermal Power, Venturi Total Thermal Power Venturi Reactor Thermal Power, Power Range Nuclear Instrument Power, November 18, 2012

#### 1R18 Plant Modifications

- 02-OHL-4030-SOM-041, Unit 2 Tours-U2 CR M1&2 shift Checks, Revision 38
- 50.59 Screen, 2012-0152-00, Modify Vent Line for EDG Fuel Oil Storage Tank 12-TK-47-AB
- AR 00848627, Buried Diesel Fuel Oil Storage Tank Vent Tornado Analysis
- AR 2011-8006, CD EDG Fuel Oil Storage Bubbler Tubing Size Differs from Drawing
- AR 2012-14106, Several Issues were Discovered with Dose Analyses
- AR 2012-14137, The Concrete Placement for the AB Fuel Oil Storage Tank Missile Barrier
- AR 2012-14758, FOST Vent Pipe Missile Protection Concrete Curing, November 27, 2012
- AR-2012-13183, 2-BLP-130 Slowly Drifting, October 22, 2012
- AR-2012-14563, 2-BLP-130 is Drifting Low, Approaching 6% Deviation Criteria, November 20, 2012
- EC-0000052350, Increase Oriface Passage for the thrust and Journal Bearing Housings Oil Supply on 1-PP-1E, October 30, 2012
- EC-50869, Add Back-Up Vent Path to 12-TK-47-CD, Revision 1
- EC-51906, Modify Vent Line for EDG Fuel Oil Storage Tank 12-TK-47-AB

#### 1R19 Post Maintenance Testing

- 12-IHP-4030-082-001, AB, CD and N-Train Battery Weekly Surveillance and Maintenance, October 12, 2012
- 12-IHP-4030-082-004, AB, CD, N-Train Battery Charger Performance/Current Limit Test, October 16, 2012
- 12-IHP-5030-EMP-017, Plant Batteries AB, CD Battery Charger Preventive Maintenance, October 16, 2012
- 12-MHP-5021-055-001, Main Feedwater Pump Maintenance, Revision 12
- 1-IHP-5021-EMP-006, Battery Cell/Bank Replacement, October 12, 2012
- 1-OHP-4030-105-002A, #1 Boric Acid Transfer Pump Operability Test, Revision 9
- 2-IHP-6030-IMP-427, Steam Generator Atmospheric Steam Relief Control Calibration, October 1, 2012
- 2-IHP-6030-IMP-488, West Residual Heat Removal Discharge Pressure and Temperature Alarm and Indication and Heat Exchanger Outlet Flow Control Calibration, Revision 7
- AR 2012-12354, DBAB Bypass L/O Filter Pp to Motor Coupling Has Failed
- AR 2012-12600, Main Transformer Monitor Abnormal High Alarm
- AR 2012-2253, #2 Boric Acid Transfer Pump Failed Comprehensive Test
- DB-12-EDGS, Emergency Diesel Generator Support Systems Design Basis Document, Revision 4
- PMP-4030-EXE-001, Conduct of Surveillance Testing, Revision 19
- TDB-1-FIG-15-1, Safety Related Pump Inservice Test Hydraulic Reference, Revision 123
- Tech Data Book, Safety Related Throttled Valves, 2-Figure 19.8, Revision 42
- Unit 1 East Main-feed Pump Vibration, October 22 through November 5, 2012
- WO 55373708-01, 1 AB Battery Performance Test, October 16, 2012
- WO 55382002-01, Steam Generator 2-MRV-223 Hot Shutdown Panel Controller Refurbishment, October 1, 2012

- WO 55382003-01, Steam Generator 2-MRV-223 RU-11 Controller Refurbishment, October 1, 2012
- WO 55384235-01, U2 W RHR Heat Exchanger Outlet Flow Control Valve Electronic Manual Loader Controller Replacement (2-RU-17), November 15, 2012
- WO 55393558-01, Clean and Inspect Battery Charger 1-BC-AB1, October 16, 2012
- WO 55410982-01, 1-Batt-AB Cell 56 Replacement, October 12, 2012
- WO 55413074, 1-PP-1E: Inspect and repair Pump, October 30, 2012

### 1R22 Surveillance Testing

- 12-IHP-5021-IMP-001, Lead Lifting/Landing and Electrical Jumper/Fuse Installation and Removal, December 12, 2012
- 12-IHP-6030-CFG-002, Configuration of Foxboro Spec200 $\mu$  Control Cards (CCC), Revision 4, December 12, 2012
- 12-MHP-4030-010-008, Ice Condenser Intermediate Deck Door Weekly Surveillance, July 19, 2012
- 1-IHP-4030-113-131Q, Nuclear Instrumentation Power Range Channel Operational Test and Calibration with New Flux Data Equivalent Voltages, Revision 8
- 1-IHP-4030-134-001, Unit 1 DIS Surveillance and Baseline Testing, October 9, 2012
- 1-OHP-4030-114-032, Quadrant Power Tilt Ratio Calculation, documented November 15, 2012
- 2-IHP-4030-202-026,  $\Delta T/TAVG$  Protection Set 4 Channel Operational Test and Calibration, December 12, 2012
- 2-IHP-4030-202-027,  $\Delta T/TAVG$  protection Set 3 Channel Operational Test and Calibration, December 14, 2012
- 2-IHP-4030-202-05,  $\Delta T/TAVG$  Protection Set 1 Channel Operational Test and Calibration, Revision 8, December 12, 2012
- 2-IHP-4030-202-206,  $\Delta T/TAVG$  Protection Set 2 channel Operational Test and Calibration, December 13, 2012
- 2-OHP-4030-202-016, Attachment 1, Reactor Coolant System Leak Rate Test With eDNA Available, October 4, 2012
- 2-OHP-4030-214-030, Data Sheet 10, Reactor Coolant Leakage Evaluation, October 2012
- 55322780-02, 2-DC-R2N1S9/10, Remove, Reconfigure and Reinstall Control Card, December 12, 2012
- 55396005-01, 2-SC-R6N1S7, Replace Wire Ferrules and Calibrate, December 13, 2012
- AR 2011-13975, Unit 1 RCS Leak Rate Indicated a Tier 3 Entry
- AR 2012-12442, 1-88X-UDISA Phase 2 Low Current
- AR 2012-12521, 1-88X-UDISB Phase 2 Low Current
- AR 2012-14364, 1-NRI-16 (Nuclear Instrument Channel IV Power Range Neutron Flux Differential Meter) Found Out of Spec During Surveillance
- AR 2012-15049, U2 received loop 4 DT High, greater than Auct DT deviation
- AR 2012-15550, PPC Point T0427A (Lp2 OPdelta T meter) out of spec
- AR 2012-3155, Unit 2 RCS Unidentified Leak Rate Entered Tier 1
- Unit 1 Cycle 24 Core Flux Map Data, November 15, 2012
- Unit 1 Cycle 24 Quarterly Report of Daily Plots for Upper & Lower Radial Tilts, November 15, 2012
- WO 55411966-01, Replace Train A Glow Plugs, October 5, 2012
- WO 55411966-03, Replace Train B Glow Plugs, October 8, 2012

#### 1EP4 Emergency Action level and Emergency Plan Changes

- Donald C. Cook Nuclear Plant Emergency Plan; Revision 29

#### 1EP6

- AR 2012-15139, EOF failed to activate within 60 minutes
- AR 2012-15153, Facility activation timely with personnel substitution
- AR 2012-15185, Failed Objective for Risk Significant Planning Standard
- AR 2012-15217, Individual did not respond to unannounced drill in time
- AR 2012-15250, Obtain remote access for ERO County and State Liaisons
- AR 2012-15273, ACAD #18259 didn't report to ERO drill after accepting duty
- Donald C. Cook Nuclear Power Plant Emergency Response Organization, Unannounced Augmentation Drill, Team 3, NRC Preliminary Report, December 4, 2012
- EMD-32a (01-02) Nuclear Plant Event Notification, December 4, 2012
- RMT-2080-EPP-500, Drill & Exercise Scheduling, Development, Conduct & Evaluation, December 4, 2012

#### 40A1 Performance Indicator Verification

- PMP-7110-PIP-001, Reactor Oversight Program Performance Indicators and Monthly Operating Report Data, Data Sheet 11, Reactor Coolant System Leakage, Unit 1 and Unit 2, July 2011 through June 2012

#### 40A2 Problem Identification and Resolution

- AR 2012-10918, 2CD EDG mechanical overspeed tripped during surveillance
- AR 2012-12195, Secondary Transient in Unit 2 during 5B Heater Maintenance
- AR 2012-13667, Non-Compliance with PMP-5020-RTM-001
- AR 2012-15297, 1-RH-107W identified by NRC to be leaking by
- AR 2012-7848, 10CFR50 Appendix R Coordination Study Deficiency
- AR-2011-1594, West MFP high vibration and SLO pump failure
- AR-2012-7875, 609 Aux Building Roll-up Door Opened with Integrity Set
- DB-12-120V, Design Basis Document for the 120 Volt AC System, Revision 3
- NEI Position Statement, Guidance to Licensees on Complying with the Licensed Power Limit, June 12, 2008
- PA-12-05, Emergency Preparedness Performance Assurance Audit, July 20, 2012
- Performance Assurance Semi-Monthly Roll-up Nov 1-15
- Performance Assurance Semi-Monthly Roll-up Oct 16-31
- Performance Assurance Semi-Monthly Roll-up, June 22-July 5
- Performance Assurance Semi-Monthly Roll-up, Aug. 3-16, 2012
- Performance Assurance Semi-Monthly Roll-up, July 20-Aug 2
- PMP-4010-ODM-001, Operational Decision Making, August 24, 2012
- RIS 2007-21, NRC Regulatory Issue Summary, Adherence to Licensed Thermal Power Limits, Revision 1
- Safety Evaluation Regarding Endorsement of NEI Guidance for Adhering to the Licensed Thermal Power Limit, October 8, 2008
- Unit 1 East MFPT Shaft Oil Pump Operational Decision Maker, July 20, 2012
- Unit 1 MFP Suction Strainer, Potential Basket Strainer Degradation Operational Decision Maker, November 5, 2012
- Unit 1 Operator Burden Report, December 3, 2012

- Unit 2 Operator Burden Report, December 3, 2012
- WO 55413565 01, Recorder 1-MR-16 failure Unit 1 Control Room, December 5, 2012
- WO 55414469 01, Recorder 1-MR-70 failure Unit 1 Control Room (CRD), December 5, 2012
- WO 55414857 01, 1MR-48 CR Tave/Tref Recorder is failing, December 4, 2012

#### 40A3 Followup of Events and Notices of Enforcement Discretion

- 12-MHP-5021-010-001, Ice Condenser Divider Barrier Seal Maintenance, April 16, 2012
- 2-EHP-4030-295-249, Containment Divider Barrier Seal Surveillance Test, April 20, 2012
- 2-OHP-4021-001-006, Power Escalation, November 30, 2012
- 2-OHP-4021-055-003, Placing A Main Feed Pump In Service, November 30, 2012
- AR 2012-14896, Main Turbine Left Outer Control Valve LVDT A
- AR 2012-3595, Divider Barrier Issues in Unit 2 Instrument Room
- Work Order 55380044-20, Replace Section of Divider Barrier Seal in the 2 and 3 Accumulator Room Area, April 17, 2012
- Work Order 5538044-19, Instrument Room Divider Barrier, April 7, 2012

#### 40A5 Other Activities

- 12 CHP 5021.CCD.019, Anchor Inspection Data Sheet, Spent Fuel Pit Heat Exchanger Room, August 23, 1993
- 12-5163-11, Plant Arrangement Sections G-G, H-H & K-K, Units 1 & 2, January 26, 2008
- 12-EHP-4030-001-001, Check Valve Examination Surveillance, July 26, 2012
- 12-EHP-5043-EDC-001, Evaluation of Discrepant Conditions, Revision 016
- 12-EHP-5070-UPTI-001, Underground Piping and Tank Integrity Program, Revision 0
- 3001.103, Donald C. Cook Nuclear Plant Underground Piping Program Risk Ranking, January 3, 2011
- 51-9189376-000, Cook Nuclear Plant (CNP) Flooding Walkdown Plan – NTTF Recommendation 2.3, Revision 0
- AR 2010-8491, Unit 2 AB Diesel Pipe Support Missing Bolt
- AR 2012-10934, 2-FRV-210 Steam Generator Refulating Valve Bolts are Loose
- AR 2012-11049, Steam Exiting Turbine Sump Hatch
- AR 2012-11212, Surface Rust on Anchor Bolt
- AR 2012-11305, Fukushima Flood Walkdowns – U2 4kv Room Curb Heights
- AR 2012-11433, Apparatus Attached to Conduit in Unit 2 Annulus
- AR 2012-11476, Debris Found Between 1-DGAB and the Wall
- AR 2012-11485, Work Order to Correct Deficient Condition Not Performed
- AR 2012-11612, Fukushima Seismic W/D – WO to Correct Deficiency Not
- AR 2012-11618, Fukushima Flood Walkdown Unsealed Penetrations – Screenhouse
- AR 2012-11642, Fukushima Flood Walkdown – Low Physical Margin
- AR 2012-11648, Fukushima Walkdowns – Undocumented Manhole Cover
- AR 2012-11726, RAS-1 Radiation Area Monitor Near Safety-Related Equipment
- AR 2012-11728, Potential Seismic Interaction Issue with 12-SMIC
- AR 2012-11756, Fukushima Seismic Walkdown Aggregate Review
- AR 2012-11762, Fukushima Seismic W/D – Push Button Station Documentation
- AR 2012-11780, Missing Nut on 2-CS-301W
- AR 2012-11782, Missing Anchor Bolts on 2-PHC-1
- AR 2012-12406, For Broken Termination Box for ATT 21 Step 2.1
- AR 2012-12414, For Broken Termination Box for ATT 21 Step 2.1
- AR 2012-13178, Postulated Flood to be Dispositioned in Current Analysis
- AR 2012-13742, Water Touching Cables

- AR 2012-13848, Bad Unit Heater for ATT 17 Step 2.4
- AR 2012-13851, Bad Unit Heater ATT 17 Step 2.4
- AR 2012-13893, Anchor Bolt Loose
- AR 2012-14141, 12-XJ-79-3 Did Not Meet Requirements of 12-MHP-5021-001-160
- Buried Piping Inspection Plan and Underground Piping and Tank Condition, Revision 1
- DIT-B-03305-00, Renewed License, UFSAR Update for Flooding Evaluation Report SD-062306-003, June 8, 2009
- EHI-5070-UPTI, Underground Piping and Tank Integrity Program, Revision 0
- Flood Protection Feature Walkdown List, Revision 0
- Program Health Report 03-2012, Underground Pipe and Integrity Program
- QHSA-GT-2012-4585-3, Quick Hit Self Assessment of Underground Pipe and Tanks Integrity Program Inspection Plan, May 27, 2011
- SD-061206-001, Flooding Evaluation Report for D.C. Cook Nuclear Power Plant, Revision 2
- Seismic Walkdown Interim Report, In Response to NTTTF Recommendation 2.3: Seismic, Revision 0
- Unit 1 & 2 Containment SWEL 1, Revision 0
- Unit 1 & 2 SWEL 1 Electrical, Revision 0
- Unit 1 & 2 SWEL Aux Less Electrical, Revision 0
- Unit 1 & 2 SWEL Turbine Less Electrical, Revision 0
- WO 55282879-04, 12-DR-129, Re-install Water Tight Hatch for TRS Overflow Pit, July 26, 2012
- WO 552828878-03, Provide Access to the Turbine Room Sump Pit in Support of Pit and Valve Inspections, July 25, 2012
- WO 55412763-01, 12-4MC-MUP: Replace Relay, October 23, 2012
- WO-55282878-02, 12-DR-129, Inspect for Degradation, Functionality and/or Corrosion, July 26, 2012

## LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
ANS	American Nuclear Society
ANSI	American National Standards Institute
CAP	Corrective Action Program
CCDP	Conditional Core Damage Probability
CFR	Code of Federal Regulations
CPAP	Continuous Positive Airway Pressure
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
GL	Generic Letter
HELB	High Energy Line Break
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
LOOP	Loss of Offsite Power
MDAFW	Motor-Driven Auxiliary Feedwater
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PI	Performance Indicator
SDP	Significance Determination Process
SG	Steam Generator
SPAR	Standardized Plant Risk analysis
SRA	Senior Reactor Analyst
SRO	Senior Reactor Operator
TDAFWP	Turbine-Driven Auxiliary Feedwater Pump
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Test
URI	Unresolved Item
WO	Work Order

L. Weber

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Sincerely,

*/RA/*

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket Nos. 05000-315; 05000-316  
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SUBJECT: D.C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2 – NRC INTEGRATED  
INSPECTION REPORT 05000315/2012005 and 05000316/2012005

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