



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

November 13, 2014

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

**SUBJECT: DONALD C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2
NRC INTEGRATED INSPECTION REPORT 05000315/2014004;
05000316/2014004; AND 07200072/2014001**

Dear Mr. Weber:

On September 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Donald C. Cook Nuclear Power Plant, Units 1 and 2. The enclosed report documents the results of this inspection, which were discussed on October 3, 2014, with Mr. J. Gebbie, and other members of your staff.

Based on the results of this inspection, two NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy. Additionally, a licensee-identified violation is listed in Section 4OA7 of this report.

If you contest the subject or severity of any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Donald C. Cook Nuclear Power Plant. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Donald C. Cook Nuclear Power Plant.

L. Weber

-2-

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50-315; 50-316; 72-072
License Nos. DPR-58; DPR-74

Enclosure:
IR 05000315/2014004; 05000316/2014004;
07200072/2014001
w/Attachment: Supplemental Information

cc w/encl: Distribution via LISTSERV®

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 05000315; 05000316; 07200072
License Nos: DPR-58; DPR-74

Report No: 05000315/2014004; 05000316/2014004;
07200072/2014001

Licensee: Indiana Michigan Power Company

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

Location: Bridgman, MI

Dates: July 1 through September 30, 2014

Inspectors: J. Ellegood, Senior Resident Inspector
T. Taylor, Resident Inspector
R. Edwards, Reactor Inspector
J. Mancuso, Reactor Engineer
V. Meghani, Reactor Inspector
M. Mitchell, Health Physicist
A. Schwab, Reactor Engineer
N. Shah, Project Engineer

Approved by: Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	2
REPORT DETAILS	4
Summary of Plant Status.....	4
1. REACTOR SAFETY.....	4
1R04 Equipment Alignment (71111.04)	4
1R05 Fire Protection (71111.05)	5
1R11 Licensed Operator Requalification Program (71111.11).....	6
1R12 Maintenance Effectiveness (71111.12).....	7
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)	10
1R15 Operability Determinations and Functional Assessments (71111.15)	11
1R18 Plant Modifications (71111.18)	12
1R19 Post-Maintenance Testing (71111.19).....	13
1R20 Outage Activities (71111.20).....	15
1R22 Surveillance Testing (71111.22)	15
1EP6 Drill Evaluation (71114.06).....	16
4. OTHER ACTIVITIES	17
4OA1 Performance Indicator Verification (71151)	17
4OA2 Identification and Resolution of Problems (71152)	20
4OA5 Other Activities	21
4OA6 Management Meetings	22
SUPPLEMENTAL INFORMATION	1
KEY POINTS OF CONTACT.....	1
LIST OF ITEMS OPENED, CLOSED AND DISCUSSED	2
LIST OF DOCUMENTS REVIEWED.....	2
LIST OF ACRONYMS USED	7

SUMMARY OF FINDINGS

Inspection Report 05000315/2014004, 05000316/2014004, 07200072/2014001; 07/01/2014 – 09/30/2014; Donald C. Cook Nuclear Power Plant, Units 1 and 2; Maintenance Effectiveness; Operability Determinations and Functional Assessments; Post Maintenance Testing.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. The findings were considered non-cited violations (NCVs) of NRC regulations. The significance of inspection findings is 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, "Aspects Within the Cross-Cutting Areas" effective date January 1, 2014. All violations of NRC requirements are disposed in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process" Revision 5, dated February 2014.

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance with an associated non-cited violation of 10 CFR 50, Appendix B, Criterion V, Procedures, was identified by the inspectors for the failure to follow the Operability Determination Procedure, PMP-7030-OPR-001. Specifically, for instances of high oil level in the turbine-driven auxiliary feedwater (TDAFW) pump governor sight-glasses and high water concentrations in motor-driven auxiliary feedwater (MDAFW) pump bearings, components were assumed to be operable without supporting technical justification. Further, past operability assessments were not assigned for the conditions. During a review of action requests (AR's) associated with the auxiliary feedwater (AFW) system, the inspectors identified four instances since 2008 when the licensee identified that oil level was high-out-of-sight in a TDAFW pump governor sight-glass. The licensee did not assess certain impacts on operability even though several references identified potential adverse impacts with the noted oil level. The operations logs set an appropriate level as being between half-full (minimum) and "visible" in the sight-glass (maximum). The logs also contained a note stating if level was visible in the sight-glass, the pump was operable. Additionally, the vendor manual and a maintenance procedure cautioned against the level being high in the system. No documentation was provided that addressed these concerns. In regards to the MDAFW pumps, the inspectors identified AR's documenting periodic instances of high water concentrations in the pump bearings. When subsequent licensee analysis confirmed significantly high concentrations of water, no past operability assessments were done to assess any impacts the moisture may have had. In each instance of a high oil level or high moisture result, the licensee corrected the condition after discovery. The licensee also generated an AR to explore the inspectors' concerns with regard to a lack of documented justification for operability while the conditions existed.

The issue was more than minor because it adversely affected the Equipment Performance attribute of the Mitigating Systems Cornerstone. Specifically, the failure to properly assess the operability of safety related components (with all relevant information) can impact the availability, reliability, and capability of systems that respond to initiating events, in that components assumed to be operable may actually be in a condition where they cannot reliably perform their safety functions. Further, if left uncorrected, the issue could become

a more significant safety concern as future operability determinations could also be deficient. The inspectors were also informed by IMC 0612, Appendix E, examples 3.j and 3.k, in that equipment inoperability is not a prerequisite for an issue being more than minor. Per the guidance, the inspectors determined reasonable doubt existed regarding the operability of components. The finding screened as Green, or very low safety significance, because the performance deficiency of failing to follow the Operability Determination procedure did not in itself represent a loss of system and/or function. The inspectors determined the finding had an associated cross-cutting aspect in the area of Problem Identification and Resolution. Specifically, the organization did not thoroughly evaluate issues to ensure resolutions address causes and extent of conditions commensurate with their safety significance (P.2). P.2, Evaluation, aligns with the Safety Culture Common Language attribute of PI.2, Evaluation, outlined in NUREG-2165. Examples under PI.2 include prioritizing and thoroughly investigating issues with regard to their safety significance. The licensee did not address all of the relevant information which could impact the operability determinations associated with the AFW pumps. (Section 1R12)

- Green. The inspectors identified a finding of very low safety significance (Green) with an associated non-cited violation of 10 CFR 50, Appendix B, Criterion III, for failure to correctly translate regulatory requirements related to the American Society for Mechanical Engineers (ASME) code class boundary to the AFW pump room cooler. Specifically, the licensee failed to classify the internal piping in the AFW pump room coolers as ASME code class 3 piping when it should have been classified as such. As immediate action, the licensee declared the affected room cooler inoperable and repaired the leak. Because of low room temperature, the supported TDAFW pump remained operable.

The inspectors determined that the failure of the licensee to correctly translate regulatory requirements for a safety related system into a drawing, as described in 10 CFR 50, Appendix B, Criterion III, Design Control, was a performance deficiency warranting further evaluation in the Significance Determination Process (SDP). The issue screened as more-than-minor because it adversely affected the Design Control attribute of the Mitigating Systems cornerstone. Using Appendix A of IMC 0609, the inspectors concluded the finding was of very low safety significance, Green, because the supported AFW system remained operable. Because the performance deficiency occurred in 2000, the finding does not reflect current performance and no cross-cutting aspect exists. Because the violation was of very low safety significance and promptly entered into the licensee's Corrective Action Program (CAP) (AR 2014-7570), and the violation was not repetitive or willful, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (Section 1R19)

- A violation of very low safety or security significance that was identified by the licensee has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. The violations and CAP tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near 100 percent power until September 20, 2014, when the licensee reduced power in preparation for a refueling outage. On September 24, the licensee shutdown the reactor and entered the refueling outage. Unit 1 remained shut down for the remainder of the inspection period.

On July 11, 2014, the licensee reduced power in Unit 2 to approximately 25 percent to perform repairs on a leaking moisture separator reheater cross over pipe. After completing repairs, the licensee ascended to 100 percent. Unit 2 operated at or near 100 percent for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

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

- Unit 2 east containment spray system;
- Unit 2 CD emergency diesel generator (EDG); and
- Unit 2 AFW systems during work on east motor driven AFW pump.

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 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 Inspection procedure (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:

- Unit 1 north and south safety injection pump rooms (Fire Zones 64A and 64B);
- Unit 2 north and south safety injection pump rooms (Fire Zones 65A and 65B);
- Unit 1 reciprocating charging pump room and east and west centrifugal charging pump rooms (Fire Zones 62A, 62B, and 62C); and
- Unit 2 reciprocating charging pump room and east and west centrifugal charging pump rooms (Fire Zones 63A, 63B, and 63C).

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.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On July 23, 2014, the inspectors observed a fire brigade activation for a simulated fire in a chemistry lab. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were:

- effectiveness of fire brigade leader communications, command, and control;
- communications in the control room;
- adherence to the pre-planned drill scenario; and
- drill objectives.

Documents reviewed are listed in the Attachment to this report. Portions of this sample were verified during the second quarter, which included an observation of fire brigade performance during live-fire exercises at an offsite training facility.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On September 9, 2014, 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

b. Findings

No findings were identified.

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

a. Inspection Scope

From July 12-15, 2014, the inspectors observed portions of reactor power maneuvers from 100 percent to approximately 25 percent power and back. The power change was planned by the licensee and done to support installation of an enclosure over an expansion-bellows steam leak on piping associated with a Unit 2 Moisture Separator-Reheater. 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 (if applicable);
- correct use and implementation of procedures;
- control board (or equipment) manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications (if applicable).

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.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- AFW system

The inspectors reviewed events such as when 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 one quarterly maintenance effectiveness sample as defined in IP 71111.12-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) with an associated NCV of 10 CFR 50, Appendix B, Criterion V, Procedures, for the failure to follow the Operability Determination Procedure PMP-7030-OPR-001. Specifically, for instances of high oil level in the TDAFW pump governor sight-glasses and high water concentrations in MDAFW pump bearings, components were assumed to be operable without supporting technical justification. Further, past operability assessments were not assigned for the conditions.

Description: During a review of AR's associated with the AFW system, the inspectors identified some issues regarding high oil levels in the TDAFW pump governors, along with some water intrusion issues associated with the MDAFW pump bearings. Specifically, AR's 2012-14171 and 2012-3339 documented the oil level as high out-of-sight in TDAFW pump governor sight-glasses. Action Request 2012-14171 documented the discovery time as 0932 on November 11, 2012. On November 12, 2012, the AR documented that a walkdown was performed which identified a meniscus was in-fact visible; hence, the oil level was still 'visible within the sight-glass'. The licensee did not document a technical justification for operability during the time the level was thought to be high out-of-sight. Action Request 2012-3339 documented another high level condition on March 15, 2012. The AR documents oil level was returned within band and that the high level condition did not exist. However, the level was only confirmed to be in band (as documented) on March 18, 2012. Between discovery of the condition on March 15, 2012, and the documented confirmation of level on March 18, 2012, the licensee considered the pump operable without a technical basis. Action Requests 00852429 and 00832321 documented similar conditions. The inspectors reviewed licensee procedures and vendor information regarding the governors. The licensee's governor maintenance procedure, 12-MHP-5021-056-011, had a precaution which stated "oil level must never be above the line where the case and column castings meet." Vendor Manual VTD-WOOD-0004 echoed the precaution in the procedure, stating that oil above that level can be churned to foam by rotation of the flyweight head in the governor. Further, operator logs set an appropriate level as being between half-

full (minimum) and “visible” in the sight-glass (maximum). The logs also contained a note stating if the level was visible in the sight-glass, the pump was operable. Contrary to this information, the licensee considered the pumps operable before level was restored and/or verified to be within band without a documented technical basis. The licensee assessed the potential for water intrusion, but did not address information contained in the aforementioned reference documents. As a result, no past operability evaluations were performed as well. The inspectors also discovered several AR’s documenting abnormal oil appearance along with > 500 ppm water concentration via initial crackle testing in the MDAFW pump bearings. Subsequent lab analyses reported water concentrations in excess of 50,000 ppm, with one recorded as 144,540 ppm (AR’s 2013-9620 and 2012-14347 respectfully). Electric Power Research Institute recommended moisture content in bearing oil is 5000 ppm. No past operability assessments were assigned when the high moisture concentrations were discovered. Licensee procedure PMP-7030-OPR-001, Operability Determination, states that information should be sufficient to conclude that there is reasonable expectation that the system, structure and component (SSC) is operable. If not able to conclude this, declare the SSC inoperable. Further, the procedure requires documentation of the technical justification and references used to determine operability. Additionally, PMP-7030-OPR-001 requires that if there is evidence an identified condition may have existed when the SSCs were required to be operable, then a past operability assessment shall be done. Contrary to these requirements, components were considered operable with insufficient technical basis. The licensee went back to assess the conditions to determine if appropriate operability determinations were made based on the inspectors’ observations.

Analysis: The failure to properly conduct and document operability determinations for safety related equipment was a performance deficiency warranting further assessment in the Significance Determination Process. The issue was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” issued July 10, 2012, because it adversely affected the Equipment Performance attribute of the Mitigating Systems Cornerstone. Specifically, the failure to properly assess the operability of safety related components (with all relevant information) can impact the availability, reliability, and capability of systems that respond to initiating events, in that, components assumed to be operable may actually be in a condition where they cannot reliably perform their safety functions. Further, if left uncorrected, the issue could become a more significant safety concern as future operability determinations could also be deficient. The inspectors were also informed by IMC 0612, Appendix E, “Examples of Minor Issues,” issued August 11, 2009, examples 3.j and 3.k, in that equipment inoperability is not a prerequisite for an issue being more than minor. Per the guidance, the inspectors determined reasonable doubt existed regarding the operability of components.

The finding was screened for significance in accordance with IMC 0609, “Significance Determination Process,” issued June 2, 2012. Per Appendix A, “The Significance Determination Process (SDP) for Findings-at-Power,” issued June 19, 2012, the finding screened as Green, or very low safety significance, in Exhibit 2. Specifically, all questions were answered ‘no’ under Section A for findings related to Mitigating SSCs and Functionality. Specifically, the performance deficiency of failing to follow the Operability Determination procedure did not in itself represent a loss of system and/or function.

The inspectors determined the finding had an associated cross-cutting aspect in the area of Problem Identification and Resolution. Specifically, the organization did not thoroughly evaluate issues to ensure resolutions address causes and extent of conditions commensurate with their safety significance (P.2). P.2, Evaluation, aligns with the Safety Culture Common Language attribute of PI.2, Evaluation, outlined in NUREG-2165. Examples under PI.2 include prioritizing and thoroughly investigating issues with regard to their safety significance. The licensee did not address all of the relevant information which could impact the operability determinations associated with the AFW pumps.

Enforcement: 10 CFR 50, Appendix B, Criterion V, Procedures, states, in part, that activities affecting quality shall be accomplished in accordance with instructions, procedures, and drawings appropriate to the circumstances. Determining whether or not safety related equipment is operable, with appropriate technical justification, is an activity affecting quality, and is implemented by licensee procedure PMP-7030-OPR-001, "Operability Determination." Contrary to the procedure, the inspectors identified four occasions between June 1, 2008, and November 11, 2012, where a TDAFW pump was considered operable without appropriate technical justification when oil level was noted to be high in the governor sight-glass. Further, the inspectors identified two occasions between November 15, 2012, and July 3, 2013, where past operability assessments were not performed when moisture levels 10 or more times above industry guidelines were discovered in the MDAFW pump bearings. The licensee corrected the identified conditions and initiated AR 2014-13484 to address the inspectors' concerns. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's CAP. (NCV 05000315/2014004-01; 05000316/2014004-01, Failure to Follow Operability Determination Procedure).

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:

- Effects on Unit 2 Train A emergency core cooling system during east containment spray system work;
- Construction and use of temporary gantry lift system to support turbine building crane installation;
- Troubleshooting and further testing associated with the AB diesel fuel oil storage tank after level indication issues;
- Removal of AB battery from service during the Unit 1 refueling outage; and
- Modifications to the Unit 1 east main feed pump while online.

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.

Documents reviewed during this inspection are listed in the Attachment to this report. These maintenance risk assessments and emergent work control activities constituted five 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 2 N43 nuclear instrument low-power indicator intermittent operation;
- Safety notifications associated with containment pressure analyses; and
- Presence of foam in charging pump gearbox sight-glass.

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 three samples as defined in IP 71111.15-05.

b. Findings

The inspectors identified an unresolved item related to the mission time of the TDAFW pumps. The licensee assumed a four hour mission time for the TDAFW pump; however, TS requirements for the condensate storage tank, which provides the inventory for the TDAFW pump, requires a nine hour water inventory. The inspectors could not resolve the discrepancy during the inspection period.

While reviewing inoperability of Cook TDAFW pump room coolers, the inspectors noted that the licensee had calculated that as long as the room temperature remained below 110°F, room temperature would not challenge pump operability for four hours. The

inspectors recognized that current technical specification bases establish condensate storage tank inventory sufficient for 9 hours of AFW use. The inspectors inquired as to the difference between condensate storage tank inventory requirements and AFW mission time. While the licensee provided technical data to support AFW capability to mitigate that accident, the data provided did not address AFW mission times to cool the plant down to RHR entry criteria. Subsequent review by the inspectors of the licensing basis has yet to resolve the required mission time of the TDAFW pumps. The licensee has provided additional perspective on their position of a 4 hour mission time; however, the information provided raises additional questions that require review. The inspectors concluded that a safety concern does not exist because all room coolers are operable and reasonable assurance exists that the TDAFW can run indefinitely. Therefore, until the inspectors can determine the license basis for TDAFW pump mission time, this issue is an URI. (URI 05000315/2014004-02; 05000316/2014004-02, Turbine-Driven Auxiliary Feedwater Mission Time)

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following modification(s):

- Construction of enclosure and use of liquid-metal injection to repair Unit 2 Moisture Separator-Reheater steam leak.

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(s). The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were 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 are listed in the Attachment to this report.

This inspection constituted one temporary 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 north safety injection pump following preventative maintenance;
- Unit 2 west MDAFW Pump room cooler following preventative maintenance; and
- Unit 1 TDAFW pump following preventative maintenance.

These activities were selected based upon the SSC'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 three post-maintenance testing sample as defined in IP 71111.19-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) with an associated NCV of 10 CFR 50, Appendix B, Criterion III, for failure to correctly assign the proper ASME code class boundary to the AFW Pump room cooler. Specifically, the licensee failed to classify the internal piping in the AFW Pump room coolers as ASME code class 3 piping when it should have been classified as such.

Description: On June 11, 2014, the licensee identified a thru-wall piping leak on the essential service water return line coming from the Unit 1 TDAFW Pump room cooler. The licensee wrote an AR documenting the condition. During the review, operations used drawing OP-1-5113B to determine if the through wall leak impacted ASME code class piping. The drawing showed the heat exchanger to be non-code class piping. After the inspectors reviewed the AR, they questioned the licensee on why the piping wasn't identified as ASME Code Class 3 as discussed in Regulatory Guide 1.26, Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants. In reviewing the concern, the licensee concluded that the heat exchanger had not been properly classified during design. They subsequently designated the leak as a thru-wall leak of an ASME Code Class 3 boundary, and took actions consistent with an inoperable room cooler. The

licensee had a calculation that concluded as long as initial room temperature remained below 110°F; the TDAFW would operate for its mission time. Review of room temperatures confirmed that the TDAFW remained operable. URI 05000315/2014004-02; 05000316/2014004-02 addresses questions regarding the basis for TDAFW mission time.

Analysis: The inspectors determined that the failure of the licensee to correctly translate regulatory requirements into a drawing, as required by 10 CFR 50, Appendix B, Criterion III, Design Control, was a performance deficiency warranting further evaluation in the Significance Determination Process. The issue screened as more-than-minor because it adversely affected the Design Control attribute of the Mitigating Systems cornerstone. Specifically, improper classification of the internal piping in the AFW Pump room coolers as non-code class 3 piping adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the significance of the finding using IMC 0609 Attachment 4, "Initial Characterization of Findings," dated June 19, 2012. Inspection Manual Chapter 0609, Attachment 4 then directs the user into IMC 0609, Appendix A, "The SDP for Findings At-Power," dated June 19, 2012. In accordance with Exhibit 1 for mitigating systems, the inspectors answered question one yes because the finding was a deficiency affecting the design or qualification of a mitigating system, structure or component. Although the deficiency impacted operability of the room coolers, temperatures in the room remained low enough that the TDAFW remained operable. Therefore, the finding screened as Green, or very low safety significance. The inspectors concluded the performance deficiency occurred on November 21, 2000, when the licensee approved Revision 0 of drawing OP-1-5113b. Because of the age of the design activity, the inspectors concluded the performance deficiency did not reflect current performance; therefore, there was no cross-cutting aspect.

Enforcement: 10 CFR 50, Appendix B, Criterion III, requires, in part, for those SSCs to which this appendix applies, that regulatory requirements are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, on November 21, 2000, the licensee approved drawing OP-1-5113B with the TDAFW room heat exchanger designated as non-code class piping. Per draft general design criteria, which form part of the license bases for the plant, Criterion I requires, in part, the application of quality standards to components that reflect the importance of the safety function to be performed. Regulatory Guide 1.26 provides a means acceptable to the NRC for implementing this requirement and would result in classification of the piping as ASME code class 3. In reviewing the condition, the licensee determined that information did not exist to support excluding the room cooler from ASME code requirements. Therefore, the inspectors concluded that the licensee failed to translate regulatory requirements into drawings as required by Criterion III.

Because the violation was of very low safety significance and promptly entered into the licensee's CAP (AR 2014-7570), and the violation was not repetitive or willful, this violation is being treated as an NCV, consistent with section of 2.3.2 of the NRC Enforcement Policy. (NCV 05000315/2014004-03; 05000316/2014004-03, Failure to Classify the Internal Piping in the Auxiliary Feedwater Pump Room Coolers as ASME Code Class 3 Piping).

1R20 Outage Activities (71111.20)

.1 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for a planned refueling outage that began on September 24, 2014, and continued through the end of the inspection period. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed the reactor shutdown and cool down, outage equipment configuration and risk management, electrical lineups, control and monitoring of decay heat removal, control of containment activities, and resolution of problems associated with the outage. Since the outage extended past the end of the inspection period, not all inspection objectives have been completed.

Documents reviewed are listed in the Attachment to this report.

This inspection does not constitute an outage sample as defined in IP 71111.20-05.

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:

- 1-IHP-4030-111-001B SSPS Logic (Routine);
- Checks of turbine building crane prior to heavy lifts associated with new crane installation (Routine);
- Elevated unidentified reactor coolant system leakage on Unit 2 (Reactor Coolant System Leakrate Sample);
- Vacuum test of the AB fuel oil storage tank (Routine); and
- Testing of Unit 1 steam generator safety valves (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 were 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 UFSAR, 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 disposed 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.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on August 6, 2014, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator and 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 any inspector-observed weakness 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.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator for Donald C. Cook Unit 1 and Unit 2 for the period from the 3rd quarter 2013 through the 2nd quarter 2014. To determine the accuracy of the Performance Indicator (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 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period of July 2013 through June 2014 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 one MSPI emergency AC power system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - High Pressure Injection Systems performance indicator for Donald C. Cook, Unit 1 and Unit 2 for the period from the 3rd quarter of 2013 thru the 2nd quarter of 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of the 3rd quarter of 2013 thru the 2nd quarter of 2014 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 one MSPI high pressure injection system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Heat Removal System performance indicator for Donald C. Cook Unit 1 and Unit 2 for the period from the 3rd quarter 2013 through the 2nd quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 2013 through June 2014 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 one MSPI heat removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Residual Heat Removal System performance indicator for Donald C. Cook Unit 1 and Unit 2 for the period from the 3rd quarter 2013 through the 2nd quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 2013 through June 2014 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 one MSPI residual heat removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.5 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - Cooling Water Systems performance indicator for Donald C. Cook Unit 1 and Unit 2 for the period from the 3rd quarter 2013 through the 2nd quarter 2014. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 2013 through June 2014 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. 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 one MSPI cooling water system sample 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 and Emergency Preparedness

.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.

4OA5 Other Activities

.1 (Closed) Unresolved Item 05000315/2012004-03; 05000316/2012004-03; 07200072/2012001-01; Design Basis of Seismic Category I Structures and Equipment

a. Inspection Scope

Between February and July of 2012, Region III performed an inspection of the preoperational testing readiness of an Independent Spent Fuel Storage Installation (ISFSI) at the Donald C. Cook Nuclear Plant. The inspectors found that the licensee had, in 2011, upgraded the auxiliary building east crane to handle a maximum critical load of 145 tons. The inspection focused in part on the change process used to support the upgrade, and in particular, whether the licensee correctly applied the structural design codes referenced in the UFSAR. In NRC Inspection Report Numbers 05000315/2012004; 05000316/2012004; 07200072/2012001; 07200072/2012003; and 07200072/2012004, a URI was identified by the inspectors regarding the licensee's design and licensing basis for structural steel allowable design stresses for seismic Category 1 structures.

The Donald C. Cook UFSAR provides that the seismic Class 1 auxiliary building structure is designed in accordance with the "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings," adopted in 1963 by the American Institute of Steel Construction (AISC). Section 1.5 of the AISC Specification defines the allowable design stresses for structural steel and subsection 1.5.6 permits application of a 1/3rd increase in allowable stresses under wind and seismic loads.

The Donald C. Cook UFSAR, Section 2.9.5, "General Design Considerations for Building Structures," does not explicitly preclude the use of the 1/3rd allowable stress increase. The licensee therefore concluded in their 10 CFR 50.59 safety evaluation that applying the 1/3rd increase in its evaluation of the auxiliary building for Operating Basis Earthquake (OBE) load combinations was not a change to the facility as described in the UFSAR.

The inspectors requested assistance from the Office of Nuclear Reactor Regulation (NRR) for further review because, based on the inspectors' experience with typical nuclear plant design bases, increased allowable stresses are permitted for load combinations involving the Safe Shutdown Earthquake (SSE), but not for the OBE. NRR Division of Engineering and Region III questioned whether the licensee's interpretation regarding the 1/3rd increase in allowable stress for OBE was correct or resulted from incorrect interpretation of the terms "allowable stresses" and "normal allowables." In the documented URI, the inspectors noted that the current staff guidance contained in the Standard Review Plans clarifies these terms by explicitly precluding the use of increased allowable stresses for OBE. However, the Donald C. Cook Nuclear Plant was licensed prior to issue of such guidance, and since these terms are not defined in the Donald C. Cook licensing basis or the design code, the inspectors and NRR staff could not establish that the licensee position was contrary to their licensing basis. Consequently, the respective offices agreed not to pursue any enforcement action.

The safety significance of this issue was discussed in the inspection report numbers listed above. As stated in those reports, the licensee's application of the 1/3rd increase was limited to the OBE load combinations. For the SSE, a seismic event greater than an OBE, the inspectors determined that the calculated stresses in both the crane and auxiliary building structure were less than the SSE allowable stresses and consistent with the licensing basis per the UFSAR. As such, the inspectors concluded that the crane and the auxiliary building structural steel would retain their ability to safely hold and lower a load following a SSE; therefore, the crane would be able to safely hold and lower a load under an OBE even though the desired margin may be reduced due to use of higher allowable stresses. With this assurance, the inspector's did not have an immediate safety concern with the conduct of dry cask operations.

This URI is now closed. (URI 05000315/2012004-03; 05000316/2012004-03; 07200072/2012001-01, Design Basis of Seismic Category I Structures and Equipment).

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 3, 2014, the inspectors presented the inspection results to Mr. J. Gebbie and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meeting

Interim exit was conducted for:

- The results of the URI 05000315/316/2012004-03; and 07200072/2012001-01 were presented on October 17, 2014, to Mr. J. Gebbie and other members of the licensee's management and staff.

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.

4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

On August 23, 2014, the licensee identified a degraded fire barrier that did not have a compensatory action assigned to it. Technical Specification 5.4.1.d, "Fire Protection Implementation," for Units 1 and 2 required that written procedures be established, implemented, and maintained, covering activities related to Fire Protection Plan implementation. As part of the implementation, the licensee established procedures which provide guidelines for control of Fire Watch Activities. Procedure 12-FPP-2270-

066-011, "Fire Watch Activities," established the requirements for establishing compensatory fire watches. Specifically, Step 4.2.7 required inoperable fire barriers that are not already on fire watch to be placed on compensatory fire watch. Contrary to the above, from July 24, 2014 to August 23, 2014, the licensee failed to perform fire watches for Fire Door 1-DR-AUX471, the Unit 1 Control Rod Drive Equipment Room access door. During this period, the CO₂ closure device for the door was not capable of actuating automatically. The NRC previously documented NCV 05000315/2013009-01; 05000316/2013009-01 in Inspection Report 2013009, regarding the licensee's failure to provide for automatic closure of this door. Although the licensee promptly established a fire watch in response to the finding, on July 24, 2014, the licensee erroneously suspended the fire watch because they had made the required modifications needed to allow the door to automatically actuate. The inspectors assessed the significance of the finding using IMC 0612, Appendix B. The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Protection Against External Events (Fire) and adversely affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013, Question A of Section 1.4.3, the inspectors concluded the finding was of very low safety significance (Green) because combustible loading on both sides of the wall were representative of a fire duration less than 1.5 hours and because it was entered into the licensee's Corrective Action Program as AR 2014-9970.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

S. Bakhtiari, Dry Cask Storage Project Engineer
P. Catreaux, Manager, Dry Cask Operations
H. Etheridge, Licensing Manager
M. Scarpello, Regulatory Affairs Manager
G. Weber, Project Manager for Dry Cask Storage Project

Nuclear Regulatory Commission

R. Daley, Chief, Engineering Branch 3
B. Dickson, Chief, Health Physics and Incident Response
N. Feliz-Adorno, Reactor Engineer
J. Gilliam, Reactor Engineer
K. Riemer, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000315/2014004-01; 05000316/2014004-01	NCV	Failure to Follow Operability Determination Procedure (Section 1R12)
05000315/2014004-02; 05000316/2014004-02	URI	Turbine-Driven Auxiliary Feedwater Mission Time (Section 1R15)
05000315/2014004-03; 05000316/2014004-03	NCV	Failure to Classify the Internal Piping in the Auxiliary Feedwater Pump Room Coolers as ASME Code Class 3 Piping (Section 1R19)

Closed

05000315/2014004-01; 05000316/2014004-01	NCV	Failure to Follow Operability Determination Procedure (Section 1R12)
05000315/2014004-03; 05000316/2014004-03	NCV	Failure to Classify the Internal Piping in the Auxiliary Feedwater Pump Room Coolers as ASME Code Class 3 Piping (Section 1R19)
05000315/2012004-03; 05000316/2012004-03; 07200072/2012001-01	URI	Design Basis of Seismic Category I Structures and Equipment (Section 4OA5)

Discussed

None

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.

1R04 Equipment Alignment

- 1-OHP-4021-054-001, Operation of the Condensate System, Revision 37
- 2-OHP-4021-009-001, Placing the Containment Spray System in Standby Readiness
- 2-OHP-4021-032-008CD, Operating DG2CD Subsystems
- AR 2014-9590, 1-62-LQBA-DGAB Appears to have Become Stuck
- AR-2014-9121, 2-HV-AFP-EAC is Bypassing the Installed Drip Catch
- AR-2014-9130, Torque Switch Cracked
- Drawing OP-2-5106A-55, Auxiliary Feedwater
- FSAR Section 10.5.2, Auxiliary Feedwater System, Revision 25
- OP-1-5151C-54, Flow Diagram Emergency Diesel Generator "CD" Unit No. 1
- OP-2-5144-60, Flow Diagram Containment Spray Unit No. 2
- OP-2-5151C-49, Flow Diagram Emergency Diesel Generator "CD" Unit No. 2
- OP-2-5151D-66, Flow Diagram Emergency Diesel Generator "CD" Unit No. 2

1R05 Fire Protection

- AR 2014-9758 Revise Fire Pre-Plan Volume 1
- AR 2014-9970 Evaluate U-1&2 4KV Co2 Hazard Zones # 6
- AR 2014-9971 Investigate Amber Light (Trouble) on Co2 Cabinet
- Drill Number 314-041-E, 633' Cold Chemistry Lab, Revision 2
- Fire Hazards Analysis, Revision 16
- Fire Pre-Plans Volume 1, Revision 18
- 12-FPP-2270-066-11, Fire Watch Activities, Revision 10

1R11 Licensed Operator Requalification Program

- 1-OHP-4021-003, Power Reduction, Revision 55
- 1-OHP-4021-006, Power Escalation, Revision 69
- RQ-E-3904-U1-A, Period 3904 Unit 1 As-Found Simulator Evaluation, Revision 0

1R12 Maintenance Effectiveness

- 12-EHP-5030-OIL-001, Oil Analysis Program, Revision 9
- 2012-13374, Oxidizing AFW Piping, October 25, 2012
- AR 2013-4646, 1-FMO-212 Did Not Actuate to Intermediate Position
- AR 2014-13484, Adequacy of Past AFW Operability Evaluations
- AR-2012-11244, Wiring Discrepancy Found in Junction Box 2-FMO-212
- AR-2012-14347, Water Detected in Oil Sample
- AR-2012-16177, Critical Parameter Instruments Found Out of Tolerance
- AR-2013-10860, Limit Switch on 2-FMO-211 Incorrectly Set
- AR-2013-16372, 2-QT-506/507, Inspection Points Out of Spec
- AR-2013-3080, TDAFP Flow Switch Reading Out of Tolerance

- AR-2013-4531, 1-FMO-212 Failed to Go Closed
- AR-2013-5769, Rusted AFW Pipe Surrounding 2-FFI-230-OR
- AR-2013-9266, 1-SV-140-1 has Less Than 1 dpm Leak
- AR-2013-9620, 1-EMDAFP O/B Bearing Oil Sample Cloudy
- ASTM D6224-09, Table 4, Interpretation of In-Service Oil Test Data and Recommended Action
- Maintenance Rule Scoping Document for Auxiliary Feedwater, Revision 5
- VTD-WOOD-0004, Woodward PG-PL Governor Installation, Revision 1

1R13 Maintenance Risk Assessments and Emergent Work Control

- 12-EAP-4030-032-002AB, AB Emergency Diesel FOST Leakage Test, Revision 3
- AR-2014-10025, Work Hours Not Validated for Covered Workers
- AR-2014-9154, Safety Monitor PRA Modeling Error
- AR-2014-9901, Contract Work Oversight Not Properly Qualified
- AR-2014-9948, AB FOST Manhole Cover Missile Barrier Removed
- Drawing OP-1-12003-33, 250V DC Main One Line Diagram
- Drawing OP-2-5104C-9, Engineered Safety Systems
- EC 52516, Install Additional Large Capacity Turbine Crane, Revision 0
- IPTE Briefing Guide, 12-QM-1S Girder Assemblies A and B Lift to Turntable
- Outage Risk Assessment Tool Output for September 26, 2014
- PMP-2291-WMP-001, Work Management Process Flowchart, Revision 31
- PMP-4100-SDR-001, Plant Shutdown Safety and Risk Management, Revision 31
- PMP-4100-SDR-002, Outage Risk Assessment and Management Revision 4
- PMP-5020-MHP-001, Lifting and Rigging Program, Revision 36
- Site Presentation, Gantry System Mock-Up Demonstration
- Unit 1 and 2 Part 1 Configuration Risk Assessments, Week of August 4, 2014
- Unit 1 and 2 Part 1 Configuration Risk Assessments, Week of August 18, 2014
- Various Unit 1 and Unit 2 Log Entries Associated with Containment Spray System Technical Specification Entries, 2012-2013

1R15 Operability Determinations and Functionality Assessments

- 01-OHL-4030-SOM-034, Unit 1 Auxiliary Tech Spec Tour, Revision 21
- 01-OHL-5030-SOM-005, Unit 1 Auxiliary Tour, Revision 27
- 50.59 Tracking Document 2014-0280-00, 50.59 Screen on Multiplexer Test Switch Use and Operability of Solid State Protection System
- AR-2011-3793, Unit 1 and Unit 2 Containment Integrity Analysis Issues
- AR-2014-7856, 2-SML-16 Status Light Flashing
- NSAL-06-6, LOCA Mass and Energy Release Analysis
- NSAL-11-5, Westinghouse LOCA Mass and Energy Release Calculation Issues
- NSAL-14-2, Westinghouse LOCA Mass and Energy Release Calculation Issue for Steam Generator Tube Material Properties
- Unit 2 East Centrifugal Charging Pump Oil Sample Results, January 2013 thru May 2014
- VTD-NUTT-0007, Nuttal Gear Corp (formerly Westinghouse) Type SU High Speed Gear Drives Installation, Operation, and Maintenance Instructions, Revision 1
- VTD-WEST-0463, Westinghouse Technical Manual for Solid State Protection System, Revision 6

1R18 Plant Modifications

- 12-MHP-5021-001-051, Installation of On-Line Temporary Leak Sealing, Revision 11
- Specification ES-PIPE-1001-QCN, Temporary On-Line Leak Sealing, Revision 1
- WOER 20009594, Request for Furmanite Repair of the 2-XJ-113-5 Steam Leak

1R19 Post-Maintenance Testing

- 1-OHP-4030-156-017T, Turbine Driven Auxiliary Feedwater System Test, Revision 16
- 2-OHP-4030-208-051N, North Safety Injection Pump System Test, Revision 11
- AR-2014-10982, Debris Found in Oil During Drain
- Drawing OP-2-98281-45, Safety Injection Elementary Diagram, Sheet 1
- EC-51374, U1 and U2 Borg Warner Safety Injection Pump Seal Heat Exchanger Replacement, Revision 0
- WO 55429069, 2-62-SIS-T21D5, Calibrate Relay
- WO 55431765, Perform GL 89-13 HX Maintenance 2- HV-AFP-WAC
- WO 55431792, Replace Safety Injection Pump Seal Heat Exchanger
- WO 55431825, 2-HV-AFP-WAC, Clean and Inspect Low Voltage Circuit
- WO 55444727, Drain, Flush, and Refill Bearing Oil Reservoir

1R20 Outage Activities

- 12-OHP-4050-FHP-010, Refueling Toll and Equipment Checkouts, Revision 14
- 1-OHP-4021-001-003, Power Reduction, Revision 55
- 1-OHP-4021-001-004, Plant Cooldown from Hot Standby to Cold Shutdown, Revision 70
- D.C. Cook Refueling Machine Operational Training, September 19, 2014
- WO 55431827-01, Inspect Reactor Vessel Head Lifting Rig, September 10, 2014

1R22 Surveillance Testing

- 12-EAP-4030-032-002AB, AB Emergency Diesel FOST Leakage Test, Revision 3
- 12-EHP-4030-051-256, Main Steam Safety Valve Setpoint Verification with Lift Assist Device, Revision 19
- 1-IHP-4030-111-001B; SSPS Logic
- 2-OHP-4030-202-016, Reactor Coolant System Leak Rate Test, Revision 32
- AR-2014-8769, Unidentified Leakrate at 0.034, Highest this Month
- AR-2014-8872, Prior to Use Shiftly Crane Inspection
- Drawing OP-1-5105D, Steam Generating System, Revision 10
- Furmanite QA-4 Trevitest Procedure and Calibration Information, Revision 0
- IPTE Briefing Guide, 12-QM-1S Girder Assemblies A and B Lift to Turntable
- PMP-5020-MHP-001, Lifting and Rigging Program, Revision 36
- Unit 2 Operations Logs, July 2014
- WO 55430680, Emergency Fuel Oil Storage Tank Test

1EP6 Drill Evaluation

- 2-OHP-4023-ES-0.1, Reactor Trip Response, Revision 28
- DC Cook August 2014 EP Training Drill Guide
- Debrief Package for ERO Drill Conducted August 6, 2014
- Donald C. Cook Training Drill Scenario, August 6, 2014
- PMP-2080-EPP-101, Emergency Classification, Revision 18

4OA1 Performance Indicator Verification

- 1-OHP-4030-108-051N, North Safety Injection Pump Test, Revision 11
- AR 2013-10860, Limit Switch on 2-FMO-221 Incorrectly Set
- AR 2013-13469, 1-OME-150-AB Fuel Injector Rack Position Out of Band
- AR 2013-15296, East RHR Pump Recorded Flow is Less Than Acceptable
- AR 2013-15551, During Performance of 12-MHP-4030-032-046, Step 4.36.4, Outboard Bearing Ground Test Did Not Meet Acceptance Criteria
- AR 2013-15626, Remove 1-SV-344E/W
- AR 2013-15896, 1-WMO-737 Will Not Close from the Control Room
- AR 2013-16480, DG2CD Required Field Flashing During Run
- AR 2013-16514, Upon Testing per 12-MHP-4030-001-001 of 2-SV-344E, WO 55408475 01, Valve Passed As Found Seat Leakage but Failed Set Pressure with "NO LIFT"
- AR 2013-17675, During Performance of Surveillance 2-OHP-4030-217-050W Step 4.8 the Unit 2 West RHR Pump 2-PP-35W Flow was Low During Testing as Read on 2-IFI-325. It is Suspected that the Instrument is Out of Calibration or Broken
- AR 2014-5927, Oil Level in Bubbler Dropped Out of Sight in MDAFP
- AR-2013-16621, CVCS Bypass Flow During Surveillance
- AR-2013-17642, 2W-CCP Surveillance Testing
- AR-2013-9569, Oil Leak on 2-ICM-260
- AR-2014-2189, Air-Gas Void Found Around 2-SI-120N
- Cook MSPI Basis Document, Revision 7
- Cook MSPI Data, 3rd Quarter 2013 thru 2nd Quarter 2014
- EHI-5202, Gas Accumulation Condition Monitoring Program, Revision 7
- MSPI Indicator Margin Remaining in Green Report for Systems ROP-MSPI-RHR Residual Heat Removal System Period July 2013 through June 2014
- NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7
- PMP-7110-PIP-001, Data Sheet 4, Safety System Unavailability – Emergency AC Power System, July 2013 through June 2014
- PMP-7110-PIP-001, Data Sheet 6, Safety System Unavailability – Auxiliary Feedwater System, July 2013 through June 2014
- PMP-7110-PIP-001, Data Sheet 7, Safety System Unavailability – Residual Heat Removal System, July 2013 through June 2014
- PMP-7110-PIP-001, Data Sheet 9, Safety System Unavailability – Cooling Water Systems, July 2013 through June 2014
- PRA-MSPI-Basis, MSPI Basis Document, Revision 7
- Regulatory Performance Indicator Assessment Guideline, NEI 99-02, Revision 7
- Various Unit 1 and Unit 2 Operator Logs, 3rd Quarter 2013 Thru 2nd Quarter 2014

4OA5 Other Activities

- 10CFR50.59 Evaluation 2010-0324-00, Auxiliary Building East Crane Uprate and Upgrade Modification, November 4, 2011
- Calculation No. 07Q3702-02, Auxiliary Building East Crane Seismic Adequacy for a 145 Ton Lift, Revision 3
- Calculation No. 07Q3702-03, Auxiliary Building and Crane Rail Seismic Adequacy Assessment for an Operational Basis Earthquake (OBE) or Safe Shutdown Earthquake (SSE) Developed from a Regulatory Guide 1.60 Ground Input, Revision 2
- Calculation No. SD-990513-006, Coupled Seismic Analysis Of Auxiliary Building Crane and Support Structure, Revision 2

- Calculation No. SD-991112-001, Qualification of Auxiliary Building Superstructure to OBE and SSE Seismic Loads Plus Design Basis Crane Loads, Revision 3
- Calculation No. SD-991214-002, Review of the Auxiliary Building Overhead Crane Design for Larger North-South Seismic Accelerations, Revision 3
- Calculation SD-991112-001, Qualification of Auxiliary Building Superstructure to OBE and SSE Seismic Loads Plus Design Basis Crane Loads, Revision 3
- Calculation SD-991214-002, Review of the Auxiliary Building Overhead Crane Design for Larger North-South Seismic Accelerations, Revision 3
- Donald C. Cook UFSAR, Revision 23
- EC 49518, Auxiliary Building East Crane Uprate And Upgrade Modification, Revision 0
- SER, September 10, 1973; License Amendment 100

4OA7 Licensee-Identified Violations

- AR 2014-9970, Evaluate U1&2 4kV CO2 Hazard Zone #6, August 23, 2014

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
AISC	American Institute of Steel Construction
AR	Action Request
ASME	American Society for Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Installation
MDAFW	Motor-Driven Auxiliary Feedwater
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
OBE	Operating Basis Earthquake
PARS	Publicly Available Records System
PI	Performance Indicator
SDP	Significance Determination Process
SSC	Structure, System and Component
SSE	Safe Shutdown Earthquake
TDAFW	Turbine-Driven Auxiliary Feedwater
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

L. Weber

-2-

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and 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 System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50-315; 50-316; 72-072
License Nos. DPR-58; DPR-74

Enclosure:
IR 05000315/2014004; 05000316/2014004;
07200072/2014001
w/Attachment: Supplemental Information

cc w/encl: Distribution via LISTSERV®

DISTRIBUTION w/encl:

John Jandovitz
RidsNrrDorLpl3-1 Resource
RidsNrrPMDCCook Resource
RidsNrrDirslrib Resource
Cynthia Pederson
Darrell Roberts
Steven Orth

Allan Barker
Carole Ariano
Linda Linn
DRPIII
DRSIII
Carmen Olteanu
ROPreports.Resource@nrc.gov

DOCUMENT NAME: DC Cook IR 2014 004

Publicly Available Non-Publicly Available Sensitive Non-Sensitive
To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl
"E" = Copy with attach/encl "N" = No copy

OFFICE	RIII	RIII	RIII	RIII
NAME	NShah:rj	KRiemer		
DATE	11/13/14	11/13/14		

OFFICIAL RECORD COPY