



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

February 11, 2015

EA-14-219

Mr. Oscar A. Limpias, Vice President-Nuclear
and Chief Nuclear Officer
Nebraska Public Power District
Cooper Nuclear Station
72676 648A Avenue
Brownville, NE 68321

**SUBJECT: COOPER NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT
05000298/2014005 AND EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Limpias:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Cooper Nuclear Station. On January 15, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements.

A violation involving the failure to maintain the operability of secondary containment during Operations with the Potential to Drain the Reactor Vessel (OPDRV) was identified. Specifically, from October 3, 2014, through October 22, 2014, Cooper Nuclear Station performed a total of 7 OPDRV activities with secondary containment inoperable in violation of Technical Specification 3.6.4.1, "Secondary Containment." The NRC issued EGM 11-003, "Enforcement Guidance Memorandum on Dispositioning Boiling Water Reactor Licensee Noncompliance with Technical Specification Containment Requirements During Operations with a Potential for Draining the Reactor Vessel," Revision 2, on December 13, 2013, allowing for the exercise of enforcement discretion for such OPDRV-related TS violations, when certain criteria are met. The NRC concluded that Cooper Nuclear Station met these criteria. Therefore, I have been authorized, after consultation with the Director, Office of Enforcement to exercise enforcement discretion in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy and, therefore, will not issue enforcement action for this violation, subject to a timely license amendment request being submitted.

If you contest the violation or significance of the non-cited violation, 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 copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Cooper Nuclear Station.

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 IV; and the NRC resident inspector at the Cooper Nuclear Station.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents 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 T. Farnholtz for/

Troy Pruett
Director
Division of Reactor Projects

Docket Nos. 50-298
License Nos. DPR-46

Enclosure: Inspection Report 05000298/2014005
w/ Attachments:
1. Supplemental Information
2. Request for Information for the
Occupational Radiation Safety
Inspection

cc w/ encl: Electronic Distribution

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Letter to Oscar A. Limpas from Troy Pruett dated February 11, 2015

SUBJECT: COOPER NUCLEAR STATION – NRC INTEGRATED INSPECTION
REPORT 05000298/2014005 AND EXERCISE OF ENFORCEMENT

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000298

License: DPR-46

Report: 05000298/2014005

Licensee: Nebraska Public Power District

Facility: Cooper Nuclear Station

Location: 72676 648A Ave
Brownville, NE

Dates: October 1, 2014 through December 31, 2014

Inspectors: J. Josey, Senior Resident Inspector
E. Coffman, Acting Senior Resident Inspector
C. Henderson, Resident Inspector
R. Azua, Senior Project Engineer
M. Langelier, Project Engineer
L. Carson II, Senior Health Physicist
P. Hernandez, Health Physicist
J. Drake, Senior Reactor Inspector
P. Elkmann, Senior Emergency Preparedness Inspector

Approved By: Jeremy Groom
Acting Chief, Project Branch C
Division of Reactor Projects

SUMMARY

IR 05000298/2014005; 10/01/2014 – 12/31/2014; Cooper Nuclear Station; Follow-up of Events and Notices of Enforcement Discretion.

The inspection activities described in this report were performed between October 1 and December 31, 2014, by the resident inspectors at the Cooper Nuclear Station and inspectors from the NRC's Region IV office. One finding of very low safety significance (Green) was documented in this report. This finding involved a violation of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Barrier Integrity

- Green. The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow Special Procedure GEH-TP-116, "Procedure for the Operation and Maintenance of the REM*TAKE-2/D-100 Modified REM*TAKE 2," Revision 3, for post-maintenance testing following corrective maintenance. Specifically, the licensee did not follow post-maintenance testing requirements associated with the calibration of the bleeder valve for the REM*TAKE-2/D-100 tool following corrective maintenance to address water intrusion. This resulted in the bleeder valve being misadjusted and nullifying the fail-safe feature of the REM*TAKE-2/D-100 tool. With the fail-safe nullified, Control Rod Blade 30-47 became disengaged from the REM*TAKE-2/D-100 tool and dropped onto the reactor core top guide when the supplemental employee inadvertently pressed the disengage button. No reactor fuel was damaged as indicated by normal radiation levels and air samples on the refuel floor and reactor water coolant samples. The licensee's immediate corrective actions for the event was to suspended all in-vessel maintenance activities and remove REM*Take-2/D-100 grapple from service and determined functionality of the tool. The licensee entered this deficiency into their corrective action program for resolution as Condition Report CR-CNS-2014-06809.

The licensee's failure to follow the post-maintenance testing requirements in Special Procedure GEH-TP-116 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the human performance attribute of the Barrier Integrity Cornerstone and affected the associated objective of maintaining functionality of fuel cladding. Specifically, with the fail-safe nullified, Control Rod Blade 30-47 became disengaged from the REM*TAKE-2/D-100 tool and dropped onto the reactor core top guide when a supplemental employee inadvertently pressed the disengage button. Using Inspection Manual Chapter 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings," dated May 09, 2014, inspectors determined that the finding was of very low safety significance (Green) because the finding did not impact the fuel barrier because it: (1) does not increase the potential for failure of the freeze seal or if unmitigated have the potential to cause a disruption of residual heat removal/decay heat removal or a loss of inventory event; (2) does not involve two or more adjacent control

rods with the potential to, or actually, add positive reactivity; and (3) does not degrade the ability to isolate a drain down or leakage path. The finding has a cross-cutting aspect in the area of human performance associated with the field presence component because the licensee failed to ensure supervisory and management oversight of work activities including contractors and supplemental personnel [H.2]. (Section 4OA3)

PLANT STATUS

The Cooper Nuclear Station began the inspection period shutdown for Refueling Outage 28, which began on September 27, 2014, during the previous quarter. On November 1, 2014, the station commenced reactor startup and the reactor was critical. On November 2, 2014, the station synchronized the main generator with the grid and began power ascension. The plant returned to full power on November 5, 2014, where it remained for the rest of the reporting period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

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

- October 15, 2014, Residual heat removal shutdown cooling, Loop A
- November 5, 2014, Residual heat removal A low-pressure coolant injection during unplanned limiting condition for operation for residual heat removal B low-pressure coolant injection
- November 10, 2014, Standby gas treatment A

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems were correctly aligned for the existing plant configuration.

These activities constituted three partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on four plant areas important to safety:

- October 4, 2014, Residual heat removal pump room, Fire Area I, Zone 1C
- October 8, 2014, Fire impairment for BLDG-DOOR-R209 and R208, Fire Area II, Zone 3A and Fire Area III, Zone 3B
- December 8, 2014, Battery room 1A, Fire Area IV(A), Zone 8E
- December 8, 2014, DC switchgear room 1A, Fire Area IV(A), Zone 8H

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

.2 Annual Inspection

a. Inspection Scope

On November 21, 2014, the inspectors completed their annual evaluation of the licensee's fire brigade performance. This evaluation included observation of an announced fire drill for the non-critical switchroom. During this drill, the inspectors evaluated the capability of the fire brigade members, the leadership ability of the brigade leader, the brigade's use of turnout gear and fire-fighting equipment, and the effectiveness of the fire brigade's team operation. The inspectors also reviewed whether the licensee's fire brigade met NRC requirements for training, dedicated size and membership, and equipment.

These activities constituted one annual inspection sample, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On November 17, 2014, the inspectors completed an inspection of the readiness and availability of risk-significant heat exchangers. The inspectors observed performance testing, reviewed the data from the performance test, and verified the licensee used the industry standard periodic maintenance method outlined in EPRI NP-7552 for the B reactor equipment cooling heat exchanger. Additionally, the inspectors walked down

the heat exchanger to observe its performance and material condition and verified that the heat exchanger was correctly categorized under the Maintenance Rule and was receiving the required maintenance.

These activities constitute completion of one heat sink performance annual review sample, as defined in Inspection Procedure 71111.07.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

.1 Non-destructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

The inspectors directly observed the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Main Steam	MSH-152	Visual
Reactor Vessel	HME-88-3	Ultrasonic
Reactor Vessel	VC8-8C-6	Magnetic Particle

The inspectors reviewed records for the following nondestructive examinations:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Main Steam	VR-DA-2	Visual
Main Steam	MS-S8	Visual
Reactor Pressure Vessel	PRE-BG1-1	Ultrasonic
Reactor Pressure Vessel	PRE-BG1-26	Ultrasonic
Control Rod Drive	CRD-26-51-1	Dye Penetrant
Control Rod Drive	CRD-26-03-1	Dye Penetrant
Control Rod Drive	CRD-30-03-1	Dye Penetrant

During the review and observation of each examination, the inspectors observed whether activities were performed in accordance with the ASME Code requirements and applicable procedures. The inspectors also reviewed the qualifications of all nondestructive examination technicians performing the inspections to determine whether they were current.

The inspectors directly observed a portion of the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Service Water	FW-8	Shielded Metal Arc Welding
Service Water	FW-9	Shielded Metal Arc Welding
Reactor Water Cleanup	RWCU-CV-15 FW-8	Gas Tungsten Arc Welding

The inspectors reviewed records for the following welding activities:

<u>SYSTEM</u>	<u>WELD IDENTIFICATION</u>	<u>EXAMINATION TYPE</u>
Service Water	FW-10	Shielded Metal Arc Welding
Service Water	FW-11	Shielded Metal Arc Welding

The inspectors reviewed whether the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code Section IX requirements. The inspectors also determined whether essential variables were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications.

These activities constitute completion of one inservice inspection sample, as defined in Inspection Procedure 71111.08.

b. Findings

No findings were identified.

.2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed 23 condition reports which dealt with inservice inspection activities and found the corrective actions for inservice inspection issues were appropriate. The specific condition reports reviewed are listed in the documents reviewed section. From this review, the inspectors concluded that the licensee has an appropriate threshold for entering inservice inspection issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry inservice inspection operating experience. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On November 19, 2014, the inspectors observed an evaluated simulator scenario performed by an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

These activities constitute completion of one quarterly licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

On November 1, 2014, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity and risk due to reactor startup.

In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure, and other operations department policies.

These activities constitute completion of one quarterly licensed operator performance sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed two instances of degraded performance or condition of safety-related structures, systems, and components (SSCs):

- November 5, 2014, Reactor equipment cooling heat exchanger B
- December 16, 2014, 125 VDC charger 1A

The inspectors reviewed the extent of condition of possible common cause structure, system, and component failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the structure, system, or component. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of two maintenance effectiveness samples, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed four risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- October 20, 2014, 4160 VAC, Bus G outage
- November 1, 2014, Dredging in the area of the intake structure barrage impact
- November 4, 2014, Technical Specification Limiting Condition for Operation 3.0.4.b risk evaluation, Mode 1 and 2 entry with SW-AOV-TCV451B unavailable
- November 24, 2014, Temporary fans associated with alternate decay heat removal room

The inspectors verified that these risk assessments were performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

The inspectors also observed portions of two emergent work activities that had the potential to affect the functional capability of mitigating systems.

- November 12, 2014, Residual heat removal injection valve RHR-MOV-27B failing to open
- November 12, 2014, Diesel generator 2, 3R cylinder injector pump replacement

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to

minimize the impact of the work activities on unaffected structures, systems, and components (SSCs).

These activities constitute completion of six maintenance risk assessments and emergent work control inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed four operability determinations and functionality assessments that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- November 18, 2014, CR-CNS-2014-06602, Operability determination of 480 VAC, Bus G, anchor bolts
- November 18, 2014, CR-CNS-2014-07552 and CR-CNS-2014-07978, Operability determination of Division I service water system SW-V-108 failed to open during post-loss of coolant accident flow to control room air conditioner
- November 19, 2014, Operability determination of secondary containment with railroad inner airlock door open
- December 15, 2014, CR-CNS-2014-08280 and CR-CNS-2014-08316, Functionality assessment of reactor core isolation cooling steam leak on drip leg trap inlet

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded structure, system, or component to be operable or functional, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability or functionality. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability or functionality of the degraded structure, system, or component.

These activities constitute completion of four operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed two permanent plant modifications that affected risk-significant structures, systems, and components (SSCs):

- October 7, 2014, modification to address 125 VDC battery rack B non-conforming bolting configuration
- October 27, 2014, HPCI-MO-14 valve replacement change evaluation document 6017820

The inspectors reviewed the design and implementation of the modifications. The inspectors verified that work activities involved in implementing the modifications did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the operability of the structures, systems, and components as modified.

These activities constitute completion of two samples of permanent modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed six post-maintenance testing activities that affected risk-significant structures, systems, or components (SSCs):

- October 21, 2014, Z sump pump Z1 high high level switch replacement
- October 22, 2014, Diesel generator 2 fuel oil injection pumps replacement
- October 27, 2014, Main steam isolation valve 80A, 80D, 86A, and 86D air operated and manifold maintenance
- November 4, 2014, 125/250 VDC B battery replacement
- November 4, 2014, Diesel generator 1 6-year inspection and maintenance
- November 4, 2014, HPCI-MOV-14 replacement

The inspectors reviewed licensing and design-basis documents for the structures, systems, and components, and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the

established acceptance criteria, and restored the operability of the affected structures, systems, and components.

These activities constitute completion of six post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

During the station's refueling outage that concluded on November 2, 2014, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed personnel fatigue, and developed mitigation strategies for losses of key safety functions. This verification included the following:

- Review of the licensee's outage plan prior to the outage
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Observation and review of operations with a potential for draining the reactor vessel
- Observation and review of fuel handling activities
- Monitoring of heat-up and startup activities

These activities constitute completion of one refueling outage sample, as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed five risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components (SSCs) were capable of performing their safety functions:

In-service tests:

- November 4, 2014, High pressure coolant injection

Containment isolation valve surveillance tests:

- October 6, 2014, Primary containment isolation valves RR-AO-740 and RR-AO-741 operability and closure timing test

Other surveillance tests:

- October 27, 2014, Reactor core isolation coolant local leak rate test RWCU-15CV, RCIC-MOV-15, and RCIC-MOV-16
- November 1, 2014, Main steam line isolation valve local leak rate testing
- November 3, 2014, Control rod drive hatch local leak-rate test

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected structures, systems, and components following testing.

These activities constitute completion of five surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspector performed an in-office review of the Cooper Nuclear Station Emergency Plan, Revision 65, dated June 23, 2014. This revision:

- Defined 'hostile action'
- Added detail about the process for requesting offsite assistance for fire fighting
- Added detail about the telephone connectivity between the licensee's site and its Emergency Operations Facility
- Added detail about the radio communications systems available to the Operations and Security departments during an emergency
- Added a requirement to maintain satellite phones in the licensee's Control Room, Technical Support Center, Emergency Operations Facility, and Joint Information Center
- Added a requirement to maintain informational signs for the public using the Steamboat Trace Trail

- Deleted a requirement to maintain respiratory protection equipment (self-contained breathing apparatus) at the Communications Building
- Deleted references to the use of the Auburn Rescue Squad and Nemaha County Hospital Rescue Squad in transporting injured station personnel to medical facilities
- Corrected typographical errors and titles, and made other administrative changes

This revision was compared to its previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspector verified that the revision did not decrease the effectiveness of the emergency plan. This 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.

These activities constitute completion of one emergency action level and emergency plan changes sample as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

The inspectors assessed the licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities. The inspectors assessed the licensee's implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. The inspectors walked down various portions of the plant and performed independent radiation dose rate measurements. The inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors reviewed licensee performance in the following areas:

- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels
- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey

performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability

- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage and contamination controls, the use of electronic dosimeters in high noise areas, dosimetry placement, airborne radioactivity monitoring, controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools, and posting and physical controls for high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements
- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

These activities constitute completion of one sample of radiological hazard assessment and exposure controls as defined in Inspection Procedure 71124.01.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

a. Inspection Scope

The inspectors evaluated whether the licensee controlled in-plant airborne radioactivity concentrations consistent with ALARA principles and that the use of respiratory protection devices did not pose an undue risk to the wearer. During the inspection, the inspectors interviewed licensee personnel, walked down various portions of the plant, and reviewed licensee performance in the following areas:

- The licensee's use, when applicable, of ventilation systems as part of its engineering controls
- The licensee's respiratory protection program for use, storage, maintenance, and quality assurance of National Institute for Occupational Safety and Health (NIOSH)-certified equipment, qualification and training of personnel, and user performance
- The licensee's capability for refilling and transporting self-contained breathing apparatus (SCBA) air bottles to and from the control room and operations support center during emergency conditions, status of self-contained breathing apparatus staged and ready for use in the plant and associated surveillance records, and personnel qualification and training
- Audits, self-assessments, and corrective action documents related to in-plant airborne radioactivity control and mitigation since the last inspection

These activities constitute completion of one sample of in-plant airborne radioactivity control and mitigation as defined in Inspection Procedure 71124.03.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

40A1 Performance Indicator Verification (71151)

.1 Mitigating System Performance Index: Emergency AC Power Systems (MS06), High Pressure Injection Systems (MS07), Heat Removal Systems (MS08), Residual Heat Removal Systems (MS09), and Cooling Water Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of September 22, 2013 through September 30, 2014, to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for emergency ac power systems, high pressure injection systems, heat removal systems, residual heat removal systems, and cooling water systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors verified that there were no unplanned exposures or losses of radiological control over locked high radiation areas and very high radiation areas during the period from the third quarter 2013 through the third quarter 2014. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 mrem. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the occupational exposure control effectiveness performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed corrective action program records for liquid or gaseous effluent releases that occurred from the third quarter 2013 through the third quarter 2014 and were reported to the NRC to verify the performance indicator data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the radiological effluent technical specifications (RETS)/offsite dose calculation manual (ODCM) radiological effluent occurrences performance indicator as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends.

These activities constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152. This sample reviewed the following condition reports (CR) and learning opportunities (LO):

- CR-CNS-2014-05233
- CR-CNS-2014-05366
- CR-CNS-2014-02290
- CR-CNS-2014-09663
- LO-2014-0051-20

b. Observations and Assessments

The station performed a focused self-assessment on operability reviews from July 29 through July 31, 2014. The station has received NRC-identified findings associated with the failure to recognize the need for an evaluation and to properly document the bases for operability when a degraded nonconforming condition was identified and failure to follow the requirements of Station Procedure 0.5OPS, "Operations Review of Condition Reports/Operability Determination." This assessment was performed to measure the effectiveness of changes to Station Procedure 0.5OPS. The period assessed was 1 year prior to the performance of the assessment. Additionally, the station's operability process was compared to industry best practices.

The station identified the following observation during the assessment period:

- The station identified two examples where Station Procedure 0.5OPS is not completely aligned with NRC Inspection Manual Chapter 0326, "Operability Determinations and Functionality Assessments for Conditions Adverse to Quality and Safety," dated January 31, 2014, nor industry standards.
 1. Station Procedure 0.5OPS allowed up to 24 hours to complete an immediate determination prior to entering the prompt determination process.
 2. The definitions of prompt determination and operability evaluation are combined. Industry best practices contain a separate definition for operability evaluation thus removing any confusion that the senior reactor operator makes the determination.

The station initiated Condition Report CR-CNS-2014-05233 to capture this issue in the station's corrective action program. The station identified the following cause contributors:

1. Station Procedure 0.5OPS, Attachment 1, flowchart contains a decision block that if additional information is expected within 24 hours then to request engineering input to support an immediate determination. If the additional

information is not expected with 24 hours, then the flowchart directs performance of an operability evaluation to support a prompt determination.

2. The definitions of prompt determination and operability evaluation are combined definitions in Station Procedure 0.5OPS. The discussion regarding timeliness of prompt determinations from Inspection Manual Chapter 0326 and industry best practices was not included in the station's definition.

The station implemented corrective actions to revise Station Procedure 0.5OPS to remove the allowance of 24 hours to perform an immediate determination. Also, the station separated the definitions of prompt determination and operability evaluation and included a discussion regarding timeliness of prompt determinations.

The inspectors reviewed the focus self-assessment and Condition Report CR-CNS-2014-05233. The inspectors noted the following observation. Station Procedure 0.5OPS, Revision 52, contained the following definition for mission time, "For operability determination purposes, the duration of structures, systems, and components operation that is credited in the design basis for the structures, systems, and components to perform its specified safety function (RIS 2005-20, Revision 1). Emergency diesel generators mission time is not specified in the current licensing basis and has been determined to be as long as the emergency diesel generators are required."

The inspectors reviewed the current licensing basis and noted the following contained in USAR Section VII-5.2 Safety Design, "The diesel generator set shall be capable of automatic start at any time and capable of continued operation at rated load, voltage, and frequency until manually stopped. USAR Section XIV requires each diesel generator set to be operable for a 30 day mission time to support its safety objective for postulated design basis accidents." The station initiated Intranet Documents Control System 66781 to revise/clarify Station Procedure 0.5OPS to reflect the current licensing basis mission time for the emergency diesel generators. Additionally, the inspectors reviewed operability evaluations associated with the emergency diesel generators for the past year and did not identify any evaluations that used the inappropriate emergency diesel generator mission time.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected three issues for an in-depth follow-up:

- On October 28, 2014, CR-CNS-2014-01855, residual heat removal service water booster pump used as is non-conforming outlet piping.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions

and that these actions were adequate to correct the condition. Specifically, verified corrective actions for use as is non-conforming schedule 30 piping on the residual heat removal service water booster pump outlet piping.

- On November 5, 2014, CR-CNS-2014-02991, structural concrete strength 50.59 evaluation used to determine concrete strength based on 28 days test data.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition. Specifically, verifying correction actions for verifying the correct concrete strength was identified for the inappropriate use of 5000 psi concrete for safety related structures.

- On November 19, 2014, CR-CNS-2014-01505, diesel generator 1 and 2 used as is without valve stem keeper seals installed.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition. Specifically, corrective actions for not installing valve stem keeper seals on diesel generator 1 and 2.

These activities constitute completion of three annual follow-up samples as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

40A3 Follow-up of Events and Notices of Enforcement Discretion (71153)

These activities constitute completion of two event follow-up samples, as defined in Inspection Procedure 71153.

.1 Dropped Control Rod

a. Inspection Scope

On October 11, 2014, the inspectors were informed by the control room that while removing Control Rod Blade 30-47 from the core, the control rod blade disengaged from the removal tool and dropped onto the reactor top guide. The inspectors monitored the licensee's actions for control rod blade recovery, reviewed station logs, and reviewed NUREG-1022, "Event Reporting Guidelines," Revision 3, to ensure licensee compliance.

b. Findings

Introduction. The inspectors reviewed a self-revealing, Green, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to follow Special Procedure GEH-TP-116,

“Procedure for the Operation and Maintenance of the REM*TAKE-2/D-100 Modified REM*TAKE 2,” Revision 3, for post-maintenance testing following corrective maintenance.

Description. On October 11, 2014, the licensee conducted control rod blade shuffles in support of Refueling Outage 28 operations. While removing Control Rod Blade 30-47 from the core, the control rod blade disengaged from the REM*TAKE-2/D-100 removal tool and dropped onto the reactor core top guide. Follow-up reactor coolant water samples revealed that no reactor fuel was damaged during this event. The licensee subsequently initiated Condition Report CR-CNS-2014-06809.

The licensee’s root cause evaluation, performed under CR-CNS-2014-06809, determined that the dropping of Control Rod Blade 30-47 was caused by, “the calibration of the bleeder valve [that] was not validated in accordance with Special Procedure GEH-TP-116, “Procedure for the Operation and Maintenance of the REM*TAKE-2/D-100 Modified REM*TAKE 2,” Revision 3, following corrective maintenance prior to operation of the REM*TAKE-2/D-100 tool.” Specifically, Special Procedure GEH-TP-116, Step 7.2.4.7 was not completed, which defines the acceptable calibration of the bleeder valve. Specifically, Step 7.2.4.7 states, that, “Acceptable movement: The grippers should retract first and then 3 to 5 seconds later the control rod blade hook should actuate. This should be in sequence. If not, adjust the bleeder valve (turning clockwise to decrease flow or counter clockwise to increase flow) as needed and repeat Sections 7.2.4.4 through 7.2.4.6 until there is acceptable movement.” The inspectors determined that the failure to accomplish Step 7.2.4.7 resulted in the bleeder valve being out of calibration, which nullified the fail-safe feature of the tool. With the fail-safe feature nullified, Control Rod Blade 30-47 became disengaged from the tool and dropped onto the reactor core when the supplemental employee inadvertently pressed the disengage button.

The licensee subsequently identified that the station did not exercise sufficient oversight of the fuel handler contractor to verify that the fail-safe feature was fully functional after water clearing activities because the contractor was considered an expert in this type of work and in the use of the new type REM*TAKE-2/D-100 tool. The inspectors reviewed the licensee’s root cause analysis and determined that the identified root cause was reasonable.

Analysis. The licensee’s failure to follow the post-maintenance testing requirements in Special Procedure GEH-TP-116 was a performance deficiency. The performance deficiency was more than minor, and therefore a finding, because it was associated with the human performance attribute of the Barrier Integrity Cornerstone and affected the associated objective of maintaining functionality of fuel cladding. Specifically, with the fail-safe nullified Control Rod Blade 30-47 became disengaged from the REM*TAKE-2/D-100 tool and dropped onto the reactor core top guide. Using Inspection Manual Chapter 0609, Appendix G, Attachment 1, “Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings,” dated May 09, 2014, inspectors determined that the finding was of very low safety significance (Green) because the finding did not impact the fuel barrier because it: (1) does not increase the potential for failure of the freeze seal or if unmitigated have the potential to cause a disruption of residual heat removal/decay heat removal or a loss of inventory event; (2) does not involve two or more adjacent control rods with the potential to, or actually, add positive reactivity; and (3) does not degrade the ability to isolate a

drain down or leakage path. The finding has a cross-cutting aspect in the area of human performance associated with the field presence component because the licensee failed to ensure supervisory and management oversight of work activities, including contractors and supplemental personnel [H.2].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings. Safety-related Special Procedure GEH TP 116, "Procedure for the Operation and Maintenance of the REM*TAKE 2/D 100 Modified REM*TAKE 2," Revision 3, Step 7.2.4.7, specified that, "Acceptable movement: The grippers should retract first and then 3 to 5 seconds later the control rod blade hook should actuate. This should be in sequence. If not, adjust the bleeder valve (turning clockwise to decrease flow or counter clockwise to increase flow) as needed and repeat Sections 7.2.4.4 through 7.2.4.6 until there is acceptable movement." Contrary to the above, on October 10, 2014, the licensee failed to accomplish activities affecting quality in accordance with documented instructions appropriate to the circumstances. Specifically, the licensee failed to accomplish Step 7.2.4.7 of Special Procedure GEH-TP-116 which resulted in the bleeder valve being misadjusted and nullified the fail-safe feature of the REM*TAKE-2/D-100 tool. The licensee's immediate corrective actions for the event was to suspended all in-vessel maintenance activities and remove REM*Take-2/D-100 grapple from service and determined functionality of the tool. Because this violation was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-CNS-2014-06809, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC's Enforcement Policy. (NCV 05000298/2014005-01, "Failure to Follow Procedure for Post Maintenance Testing")

.2 (Closed) Licensee Event Report (LER) 05000298/2014004-00, "Implementation of Enforcement Guidance Memorandum 11-003, Revision 2, Causes Conditions Prohibited by Technical Specifications"

a. Inspection Scope

During Refueling Outage 28, Cooper Nuclear Station performed Operations with a Potential for Draining the Reactor Vessel (OPDRV) activities while in Mode 5 without an operable secondary containment. An OPDRV is an activity that could result in the draining or siphoning of the reactor pressure vessel water level below the top of fuel, without crediting the use of mitigating measure to terminate the uncovering of fuel. Secondary containment is required by TS 3.6.4.1 to be operable during OPDRV. The required action for this specification is to suspend OPDRV operations. Therefore, entering the OPDRV without establishing secondary containment integrity was considered a condition prohibited by TS as defined by 10 CFR 50.73(a)(2)(i)(B).

The NRC issued Enforcement Guidance Memorandum (EGM) 11-003, Revision 2, on December 13, 2013, to provide guidance on how to disposition boiling water reactor licensee noncompliances with TS containment requirements during OPDRV operations. The NRC considers enforcement discretion related to secondary containment operability during Mode 5 OPDRV activities appropriate because the associated interim actions necessary to receive the discretion ensure an adequate level of safety by requiring

licensees' immediate actions to: (1) adhere to the NRC plain language meaning of OPDRV activities, (2) meet the requirements which specify the minimum makeup flow rate and water inventory based on OPDRV activities with long drain down times, (3) ensure that adequate defense in depth is maintained to minimize the potential for the release of fission products with secondary containment not operable by (a) monitoring RPV level to identify the onset of a loss of inventory event, (b) maintaining the capability to isolate the potential leakage paths, (c) prohibiting Mode 4 (cold shutdown) OPDRV activities, and (d) prohibiting movement of irradiated fuel with the spent fuel storage pool gates removed in Mode 5, and (4) ensure that licensees follow all other Mode 5 TS requirements for OPDRV activities.

The inspectors reviewed this Licensee Event Report for potential performance deficiencies and/or violations of regulatory requirements. The inspectors reviewed the station's implementation of the Enforcement Guidance Memorandum 11-003, Revision 2, during operations with a potential for draining the reactor vessel. Specific observations included:

1. The inspectors observed that the operations with a potential for draining the reactor vessel activities were logged in the control room narrative logs, and that the log entry appropriately recorded the standby source of makeup designated for the evolutions.
2. The inspectors noted that the reactor vessel water level was maintained at least greater than 21 feet above the top of the reactor pressure vessel flange as required by Technical Specification 3.9.6. The inspectors also verified that at least one safety-related pump was the standby source of makeup designed in the control room narrative logs for the evolutions. The inspectors confirmed that the worst case estimated time to drain the reactor cavity to the reactor pressure vessel flange was greater than 24 hours.
3. The inspectors verified that the operations with a potential for draining the reactor vessels were not conducted in Mode 4 and that the licensee did not move irradiated fuel during the operations with a potential for draining the reactor vessels. The inspectors verified that two independent means of measuring reactor pressure vessel water level were available for identifying the onset of loss of inventory events.

Technical Specification 3.6.4.1 requires, in part, that secondary containment shall be operable during operations with a potential for draining the reactor vessel. Technical Specification 3.6.4.1, Condition C, requires the licensee to initiate actions to suspend operations with a potential for draining the reactor vessel immediately when secondary containment is inoperable. Contrary to the above, from October 3, 2014 to October 22, 2014, Cooper Nuclear Station performed operations with a potential for draining the reactor vessel activities while in Mode 5 without an operable secondary containment. Specifically, the station conducted the following seven operations with a potential for draining the reactor vessel activities without an operable secondary containment:

- Draining reactor recirculation pump without the jet pump plugs fully installed

- Control rod drive maintenance
- Removal of jet pump plugs associated with reactor recirculation pump B maintenance
- Venting the control rod drives
- Defeating the scram function for two control rod drives and support IVVI inspections
- Reactor recirculation pump A seal maintenance
- Control rod drive freeze seal

These conditions were reported as conditions prohibited by Technical Specifications. The licensee entered this issue into its corrective action program as Condition Reports CR-CNS-2014-06293.

Since this violation occurred during the discretion period described in EGM 11-003, Revision 2, the NRC is exercising enforcement discretion in accordance with Section 3.5, "Violations Involving Special Circumstances," of the NRC Enforcement Policy, and, therefore, will not issue enforcement action for this violation.

In accordance with EGM 11-003, Revision 2, each licensee that receives discretion must submit a license amendment request within 4 months of the NRC staff's publication in the *Federal Register* of the notice of availability for a generic change to the standard TS to provide more clarity to the term OPDRV.

The Licensee Event Report is closed.

b. Findings

No findings were identified.

40A5 Other Activities

(Discussed) Temporary Instruction 2515/190 – Inspection of the Licensee's Proposed Interim Actions as a Result of the Near-Term Task Force Recommendation 2.1 Flooding Reevaluation

a. Inspection Scope

The inspector(s) completed a partial verification that the licensee's interim actions would perform their intended function for some beyond design basis flooding events. However, the licensee has determined that additional flooding mitigation strategies and equipment will be necessary to address the full spectrum of potential beyond design basis flooding events at the Cooper Nuclear Station. This additional review is scheduled to be completed during the Spring of 2015 after the licensee submits their Flood Hazard Reevaluation Report (FHRR). As a result, an additional inspection activity using Temporary Instruction 2515/190 will be performed following the completion of the

licensee's review to verify that the additional strategies and equipment will perform their intended function for flooding mitigation.

During the partial verification of the licensee's interim actions, the inspectors reviewed:

- Flood monitoring procedures, including water level action trigger points (Phase 1)
- Proposed beyond design basis flooding decay heat removal plan

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On October 10, 2014, the inspectors presented the radiation safety inspection results to Mr. R. Penfield, Director, Nuclear Safety Assurance, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On October 10, 2014, the inspector presented the inspection results of the review of inservice inspection activities to Mr. K. Higginbotham, General Manager, Plant Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspector had been returned or destroyed.

On December 8, 2014, the inspector presented the results of the in-office inspection of changes to the licensee's emergency plan to Ms. M. Ferguson, Manager, Emergency Preparedness, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On January 15, 2015, the inspectors presented the inspection results to Mr. O. Limpas, Vice President – Nuclear and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Bebb, Staff Health Physicist
J. Bednar, Supervisor, Radiation Protection
R. Beilke, Manager, Radiation Protection
S. Carbonnet, NDE Engineer
P. Carlock, Supervisor, Security Operations
J. Dixon, Supervisor, ALARA
S. Frieling, Staff Health Physicist
K. Higginbotham, General Manager, Plant Operations
J. Hirner, Respiratory Program Technician, Radiation Protection
C. Hopple, Radiological Protection Technician
B. Kirkpatrick, Licensing Specialist
D. Madsen, Licensing Engineer
T. McClure, ISI Engineer
E. McCutchen, Senior Licensing Engineer, Licensing
R. McDonald, Senior Health Physicist, Radiation Protection
J. Olberding, Specialist, Licensing
J. Shaw, Manager, Licensing
J. Smith, Maintenance Weld Coordinator
C. Sunderman, Assistant Training Manager, Radiation Protection
K. Tanner, Shift Supervisor, Radiation Protection
B. Thacker, Supervisor, Codes Program
T. Whistler, Radiological Protection Technician

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000298/2014005-01 NCV Failure to Follow Procedure for Post Maintenance Testing
(Section 4OA3)

Closed

05000298/2014004-00 LER Implementation of Enforcement Guidance
Memorandum 11-003, Revision 2, Causes Conditions
Prohibited by Technical Specifications (Section 4OA3)

Discussed

2515/190 TI Inspection of the Licensee's Proposed Interim Actions as a
Result of the Near-Term Task Force Recommendation 2.1
Flooding Reevaluation (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
07-056	NEDC, "Review of Alion Calculation ALION-CAL-NPPD-4012-01, Reactor Building Post DBA Pressure Analysis at Cooper Nuclear Station"	1
97-100	MP, "Z-Sump Power Supply Modification"	0
2037	Burns and Roe, "Cooper Nuclear Station Flow Diagram H&V Standby Gas Treatment & Off Gas Filters"	66
2040 Sheet 1	Burns and Roe, "Cooper Nuclear Station Flow Diagram Residual Heat Removal"	N82

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2.2.73	Operations Procedure, "Standby Gas Treatment System"	52
2.3_S-1	Operations Procedure, "Panel S – Annunciator S-1"	20

Condition Reports (CRs)

CR-CNS-2014-05744

Work Orders

4950092

Section 1R05: Fire Protection

Miscellaneous Documents

<u>Number</u>	<u>Title</u>
FP14-DOOR-R209	Fire Impairment

Condition Reports (CRs)

CR-CNS-2014-06571

Section 1R07: Heat Sink Performance

Miscellaneous Documents

<u>Number</u>	<u>Title</u>
2014-0541	Barrier Control Permit

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
7.2.42.1	Maintenance Procedure, "REC Heat Exchanger Maintenance"	9
13.15.1	Performance Evaluation Procedure, "Reactor Equipment Cooling Heat Exchanger Performance Analysis"	33

Work Orders

4911624	4973760
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Section 1R08: Inservice Inspection Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CWPS-1-1-TS-A02	ASME Section IX Welding Procedure Specification	0
6.MISC.502	ASME Class 1 System Leakage Test	42
7.7.3.1	General Welding Standard For ASME And ANSI Code ASME AND ANSI CODE APPLICATIONS	4
7.7.3.2	General Welding Standard for Structural Steel CNS-GWS - AWS D1.1 Structural Steel	3
7.7.5.1	Welding Material Care, Storage, and Control Procedure	7
GEH-VT-101	Procedure For VT-1 Examination	6
GEH-UT-329	Examination of Flange Ligaments From the Flange Surface In Accordance With Section V	0
GEH-UT-300	Procedure for Manual Examination of Reactor Vessel Assembly Welds In Accordance With PDI	12
GEH-MT-100	Procedure for Magnetic Particle Examination	8
GEH-PT-100	Procedure for Liquid Penetrant Examination Using Fluorescent and Visible Dye Liquid Penetrant Inspection Methods	9
3.28.5	Administrative Controls for Non-Destructive Examination	4

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0-EN-LI-118	Root Cause Evaluation Process	18C3
O-EN-LJ-102	Corrective Action Process	20C7
20.F.071	Radiographic Examination Of Welds	0

Condition Reports (CRs)

CR-CNS-2012-07311	CR-CNS-2012-07365	CR-CNS-2012-07396	CR-CNS-2012-08052
CR-CNS-2012-08060	CR-CNS-2012-08129	CR-CNS-2012-08195	CR-CNS-2012-08218
CR-CNS-2012-08349	CR-CNS-2012-08391	CR-CNS-2012-08451	CR-CNS-2012-08469
CR-CNS-2012-08482	CR-CNS-2012-08522	CR-CNS-2012-08571	CR-CNS-2012-08579
CR-CNS-2012-08581	CR-CNS-2012-08582	CR-CNS-2012-08584	CR-CNS-2012-08586
CR-CNS-2012-08632	CR-CNS-2012-08731	CR-CNS-2012-08735	CR-CNS-2012-08854
CR-CNS-2012-09070	CR-CNS-2012-09114	CR-CNS-2012-09151	CR-CNS-2012-09367
CR-CNS-2012-09382	CR-CNS-2012-09386	CR-CNS-2012-09387	CR-CNS-2012-09389
CR-CNS-2012-09390	CR-CNS-2012-09391	CR-CNS-2012-09393	CR-CNS-2012-09395
CR-CNS-2012-09396	CR-CNS-2012-09403	CR-CNS-2012-09404	CR-CNS-2012-09405
CR-CNS-2012-09406	CR-CNS-2012-09407	CR-CNS-2012-09408	CR-CNS-2012-09410
CR-CNS-2012-09411	CR-CNS-2012-09414	CR-CNS-2012-09415	CR-CNS-2012-09416
CR-CNS-2012-09417	CR-CNS-2012-09419	CR-CNS-2012-09420	CR-CNS-2012-09421
CR-CNS-2012-09422	CR-CNS-2012-09423	CR-CNS-2012-09424	CR-CNS-2012-09425
CR-CNS-2012-09426	CR-CNS-2012-09427	CR-CNS-2012-09428	CR-CNS-2012-09429
CR-CNS-2012-09430	CR-CNS-2012-09431	CR-CNS-2012-09432	CR-CNS-2012-09467
CR-CNS-2012-09704	CR-CNS-2012-09841	CR-CNS-2012-09887	CR-CNS-2012-09909
CR-CNS-2013-00387	CR-CNS-2013-00887	CR-CNS-2013-00989	CR-CNS-2013-01262
CR-CNS-2013-01913	CR-CNS-2013-03110	CR-CNS-2013-03584	CR-CNS-2013-03836
CR-CNS-2013-04871	CR-CNS-2013-04949	CR-CNS-2013-05372	CR-CNS-2013-05494
CR-CNS-2013-06915	CR-CNS-2013-07452	CR-CNS-2013-07684	CR-CNS-2013-07935
CR-CNS-2013-08025	CR-CNS-2013-08032	CR-CNS-2013-08423	CR-CNS-2014-00822
CR-CNS-2014-01484	CR-CNS-2014-02869	CR-CNS-2014-03059	CR-CNS-2014-03299
CR-CNS-2014-03377	CR-CNS-2014-03459	CR-CNS-2014-04653	CR-CNS-2014-05752
CR-CNS-2014-06569			

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Condition Reports (CRs)

CR-CNS-2014-07861 CR-CNS-2014-08330

Section 1R12: Maintenance Effectiveness

Procedures

<u>Number</u>	<u>Title</u>
REC-F01	Maintenance Rule Function Performance Criteria Basis
REC-PF01	Maintenance Rule Function Performance Criteria Basis

Condition Reports (CRs)

CR-CNS-2014-05786 CR-CNS-2014-05947

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2040 Sheet 2	Burns and Roe, "Cooper Nuclear Station Flow Diagram Residual Heat Removal System Loop B"	19

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0-CNS-OU-108	Station Procedure, "Cooper Shutdown Safety Management Program"	0
0-CNS-WM-104	Station Procedure, "On-Line Schedule Risk Assessment"	2
0-Protected-EQP	Station Procedure, "Protected Equipment Program"	31
0.50.5	Station Procedure, "Outage Shutdown Safety"	32

Condition Reports (CRs)

CR-CNS-2014-06953 CR-CNS-2014-07295 CR-CNS-2014-07761 CR-CNS-2014-08008
CR-CNS-2014-08009 CR-CNS-2014-08112

Work Orders

4949610 4999464 5044788

Section 1R15: Operability Determinations and Functionality Assessments

Condition Reports (CRs)

CR-CNS-2012-04836 CR-CNS-2014-05227 CR-CNS-2014-06602 CR-CNS-2014-07552
CR-CNS-2014-07978 CR-CNS-2014-08280 CR-CNS-2014-08316

Work Orders

5042864

Section 1R18: Plant Modifications

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
10-019	NEDC, "Acceptance of Structural Qualification of Pipe Support Mark No. MS-H278 by Proto-Power"	0
14-032	Engineering Evaluation, "125V Battery Anchorage Justification"	0
87-140	NEDC, "Anchor Bolt Load Calculation for 5000 psi Concrete"	4
87-221	NEDC, "125 Volt Battery Racks and Charge Mounting Calculation"	1 and 1C1
96-039	NEDC, "DC Powered Motor Operated Valve Stroke Time and Capability Calculation"	6 and 3C2
6017820	Change Evaluation Document, "HPCI-MOV-14 Valve Replacement"	

Condition Reports (CRs)

CR-CNS-2014-02991 CR-CNS-2014-06188 CR-CNS-2014-06198 CR-CNS-2014-06226
CR-CNS-2014-06503

Work Orders

4565339

Section 1R19: Post-Maintenance Testing

Miscellaneous Documents

<u>Number</u>	<u>Title</u>
11062410	Notification

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2.2.24.2	Operations Procedure, "125 VDC Electrical System"	27
2.2.25.2	Operations Procedure, "250 VDC Electrical System"	16
6.EE.608	Surveillance Procedure, "250V Station Battery Modified Performance Discharge Test"	19
6.HPCI.103	Surveillance Procedure, "HPCI IST and 92 Day Test Mode Surveillance Operation"	50
6.PC.513	Surveillance Procedure, "Main Steam Local Leak Rate Tests"	24
6.Sump.101	Surveillance Procedure, "Z Sump and Air Ejector Holdup Line Drain Operability Test (IST)"	26
6.1DG.103	Surveillance Procedure, "Diesel Generator 24 Month Operability Test (IST)(DIV 1)"	52
6.2DG.103	Surveillance Procedure, "Diesel Generator 24 Month Operability Test (IST)(DIV 2)"	48
6.2EE.602	Surveillance Procedure, "Div 2 125V/250V Station Battery 92 Day Check"	5
6.2EE.603	Surveillance Procedure, "125V Battery Service Test"	20
6.2EE.609	Surveillance Procedure, "125V/250V Station Battery Intercell Connection Testing"	17
6.2EE.611	Surveillance Procedure, "125V/250V Battery Cell and Rack Examination"	4
7.0.5	Maintenance Procedure, "Post-Maintenance Testing"	46

Condition Reports (CRs)

CR-CNS-2014-06321	CR-CNS-2014-06343	CR-CNS-2014-06865	CR-CNS-2014-06866
CR-CNS-2014-06870	CR-CNS-2014-06874	CR-CNS-2014-06875	CR-CNS-2014-06877
CR-CNS-2014-06885	CR-CNS-2014-06894	CR-CNS-2014-06900	CR-CNS-2014-06901
CR-CNS-2014-06945	CR-CNS-2014-07389		

Work Orders

4565339	4634449	4685322	4944500	4949508
4949509	4949510	4949511	4950092	4951369
4951380	4951455	4952546	5000123	5039658
5039717				

Section 1R20: Refueling and Other Outage Activities

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
791E226 Sheet 12	“Cooper Nuclear Station Elementary Diagram Primary Containment Isolation System (16-23)”	N18
791E226 Sheet 13	“Cooper Nuclear Station Elementary Diagram Primary Containment Isolation System (16-23)”	N24

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0-CNS-OU-108	Station Procedure, “Cooper Shutdown Safety Management Program”	0
0-Protected-EQP	Station Procedure, “Protected Equipment Program”	31 and 32
0.12	Station Procedure, “Working Hour Limitations and Personnel Fatigue Management”	30
0.41	Station Procedure, “Seismic”	11
0.50.0	Station Procedure, “Outage Shutdown Safety”	32

Condition Reports (CRs)

CR-CNS-2014-06312	CR-CNS-2014-06339	CR-CNS-2014-06679	CR-CNS-2014-06977
CR-CNS-2014-07172	CR-CNS-2014-07320	CR-CNS-2014-07861	

Work Orders

4948983	4949065
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Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0-CNS-WM-100	Station Procedure, "Work Order Generation, Screening, and Classification"	1
0.40	Station Procedure, "Work Control Program"	88
6.HPCI.103	Surveillance Procedure, "HPCI IST and 92 Day Test Mode Surveillance Operation"	50
6.PC.201	Surveillance Procedure, "Primary Containment Isolation Power Operated Valve Operability and Closure Timing Test (IST)"	33
6.PC.513	Surveillance Procedure, "Main Steam Local Leak Rate Tests"	23
6.PC.519	Surveillance Procedure, "Reactor Core Isolation Coolant Local Leak Rate Tests"	14
6.PC.525	Surveillance Procedure, "Hatch and Flange Local Leak Rate Tests"	19

Condition Reports (CRs)

CR-CNS-2008-03368 CR-CNS-2012-08866 CR-CNS-2014-06208 CR-CNS-2014-06248
CR-CNS-2014-06336

Work Orders

4944500 4949304 4949678 4951322 4951390
4951437 4951440 4951455 4951472 4972122
5018232

Section 2RS01: Radiological Hazard Assessment and Exposure Controls (71124.01)

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
	2014 Internal Dose Assessment Perspectus	
	2013 Internal Dose Assessment Perspectus	

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
CNS LO #2013-0045-001	Snapshop Assessment – Radiological Survey Performance	October 8, 2013
CNS LO #2013-0045-001	Pre-NRC Assessment: Radiological Survey Performance	October 13, 2013
QAD 14-0004	QA Audit Report: Radiological Controls	September 9, 2014
QAD20140024	QA Audit 14-04, “Radiological Controls”	September 9, 2014

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
WO-4951358	Radiography Shot Plan for 6.PRM.302 OG Rad Monitor Tests	0
	2013 Source Inventory & Leak Test	December 13, 2013
	2014 Source Inventory & Leak Test	June 14, 2014

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
9.EN-RP-150	Radiography and X-Ray Testing	March 5, 2014
9. ALARA.1	Radiological Protection Procedure, “Personnel Dosimetry and Occupational Radiation Exposure Program”	July 21, 2014
9.RADOP.10	Radiological Protection Procedure, “Radioactive Source Control and Accountability”	November 13, 2013
9.ENN-RP-106-1	Radiological Protection Procedure, “Radiation and Contamination Survey”	August 11, 2014
9.EN-RP-100	Radiological Protection Procedure, “ Radiation Worker Expectation”	August 11, 2014
9.EN-RP-101	Radiological Protection Procedure, “Access Control for Radiologically Controlled Areas”	May 29, 2014
9.EN-RP-108	Radiological Protection Procedure, “Radiation Protection Posting”	August 11, 2014
9.RADOP.1	Radiological Protection Procedure, “Radiation Protection and CNS”	February 26, 2013

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
9.ENN-RP-102	Radiological Protection Procedure, "Radiological Control"	August 26, 2010

Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Revision</u>
2014-052	Radwaste/Augmented Radwaste HRA Activities	0
2014-056	Rx Feed Pump Room – HRA	0
2014-057	Filter Demin Valve Room – HRA	0
2014-102	HIC Prep/Shipments	0
2014-105	Radiography Activities	1
2014-418	Inside Main Condenser	0
2014-419	TG Building & Valve Work including MPF	0
2014-503	Valve Work and Support in Drywell and Steam Tunnel	0
2014-509	Torus Desludge Diving	1
2014-546	Rx Cell Maintenance and Fuel Shuffles	0

Survey Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
CNS-1410-0215	TGB 903' – Linearity Check using Radiography Source	October 9, 2014
CNS-1410-0210	Incoming Radiography source	October 9, 2014
CNS-1409-0143	Drywell 921' - Post RHR Flush Survey	September 30, 2014
CNS-1409-0070	Drywell 921' – RE-28 Drywell Initial Entry	September 30, 2014
CNS-1409-0168	RXB 931' – General Area Beta/Gamma	September 30, 2014
CNS-1408-0056	RXB 931' – Quarterly	August 22, 2014
CNS-1409-0067	TGB 909' – Downpost from LHRA to RA survey	September 27, 2014
CNS-1409-0065	TGB 909' – Pre-Trip Walkdown	September 27, 2014

Survey Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
CNS-1408-0075	RXB 958' – Quarterly	August 30, 2014
CNS-1409-0012	RXB 859' – Monthly	September 4, 2014
CNS-1408-0065	RXB 859' – Monthly	August 26, 2014

Condition Reports (CRs)

CR-CNS-2013-06125	CR-CNS-2013-06178	CR-CNS-2013-07094	CR-CNS-2013-07394
CR-CNS-2014-00230	CR-CNS-2014-00522	CR-CNS-2014-01260	CR-CNS-2014-01264
CR-CNS-2014-02360	CR-CNS-2014-03300	CR-CNS-2014-03940	CR-CNS-2014-04090
CR-CNS-2014-04493	CR-CNS-2014-05730	CR-CNS-2014-06546	CR-CNS-2014-06550
CR-CNS-2014-06552	CR-CNS-2014-06585	CR-CNS-2014-06692	

Section 2RS3: In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

Air Sample Analyses

<u>Number</u>	<u>Title</u>	<u>Date</u>
545-6228	Reactor West Cavity Handrail	September 28, 2014
549-6228	Reactor Cavity Decon	September 28, 2014
549-6229	Reactor Cavity Decon	September 29, 2014
503-2350	Reactor Building RWCU-CV-15 Cutout	October 7, 2014

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
	2014 Internal Dose Assessment Perspectus	
	2013 Internal Dose Assessment Perspectus	
CNS LO #2013-0045- 001	Pre-NRC Assessment: Radiological Survey Performance	October 13, 2013

Audits, Self-Assessments, and Surveillances

<u>Number</u>	<u>Title</u>	<u>Date</u>
QAD 14-0004	QA Audit Report: Radiological Controls	September 9, 2014

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
Rx-903 NW SA-133	Plant Service Air Quality	August 17, 2013
Rx-903 NW SA-133	Plant Service Air Quality	August 27, 2013
TG-5 SA-202	Plant Service Air Quality	July 17, 2014

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
9.EN-RP-122	Alpha Monitoring	1
9.RADOP.17	Operation and Maintenance of HEPA Vacuum Cleaners and HEPA Ventilation Units	4
9.RADOP.20	HEPA Vacuums and Portable HEPA Filter Unit Filter Leak Testing	0
9.RADOP.5	Airborne Radioactivity Sampling	24
9.RESP.1	Respiratory Protection Program	14
9.RESP.2	Self-Contained Breathing Apparatus	22, 23
9.RESP.5	Plant Service Air Quality Checks	3

Radiation Work Permits

<u>Number</u>	<u>Title</u>	<u>Date</u>
2014-506	CRDM Changeout Undervessel: SWP Airborne	0
2014-507	CRDM Changeout Support: SWP Airborne	0

Condition Reports (CRs)

CR-CNS-2013-05944 CR-CNS-2014-02012 CR-CNS-2014-04147 CR-CNS-2014-06588

Section 4OA1: Performance Indicator Verification

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0-PI-02	Station Procedure, "Control of Mitigating Systems Performance Index Basis Document"	3

Condition Reports (CRs)

CR-CNS-2013-01561

Section 4OA2: Problem Identification and Resolution

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
14-010	Engineering Evaluation, "14" SW-1 Schedule 30 Piping Use as is, SWBP Outlet Piping"	0
14-022	Engineering Evaluation, "DG Valve Stem Keeper Seals and Broken Casting Corner"	0
98-1316	NEDC, "Review of EAS Calculation No. 150-88-P-SW-15"	3 and 3C1

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0.5.OPS	Station Procedure, "Operations Review of Condition Reports/Operability Determination"	52

Condition Reports (CRs)

CR-CNS-2014-00464 CR-CNS-2014-00776 CR-CNS-2014-01109 CR-CNS-2014-01250
CR-CNS-2014-01505 CR-CNS-2014-01855 CR-CNS-2014-02990 CR-CNS-2014-02991
CR-CNS-2014-05233 CR-CNS-2014-06503

Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
12-033	NEDC, "72-Hour Upper Pool Drain Down"	0

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
0-EN-LI-102	Station Procedure, "Corrective Action Process"	20C7
0.40	Station Procedure, "Work Control Program"	88
0.5.OPS	Station Procedure, "Operations Review of Condition Reports/Operability Determination"	50
0.50.5	Station Procedure, "Outage Shutdown Safety"	32
6.Sump.101	Surveillance Procedure, "Z Sump and Air Ejector Holdup Line Drain Operability Test (IST)"	26

Condition Reports (CRs)

CR-CNS-2014-06293 CR-CNS-2014-06809 CR-CNS-2014-06885 CR-CNS-2014-07040

Work Orders

4821799 4821940 4952148 5039663

**The following items are requested for the
Occupational Radiation Safety Inspection
At Cooper Nuclear Station
(October 6 – October 10, 2014)
Integrated Report 2014005**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before September 19, 2014

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Pete Hernandez at (817)200-1168 or Pete.Hernandez@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

1. Radiological Hazard Assessment and Exposure Controls (71124.01) and Performance Indicator Verification (71151)

Date of Last Inspection: August 9, 2013

- A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians
- B. Applicable organization charts
- C. Audits, self assessments, and LERs written since date of last inspection, related to this inspection area
- D. Procedure indexes for the radiation protection procedures
- E. Please provide specific procedures related to the following areas noted below. Additional specific procedures may be requested by number after the inspector reviews the procedure indexes.
 - 1. Radiation Protection Program Description
 - 2. Radiation Protection Conduct of Operations
 - 3. Personnel Dosimetry Program
 - 4. Posting of Radiological Areas
 - 5. High Radiation Area Controls
 - 6. RCA Access Controls and Radworker Instructions
 - 7. Conduct of Radiological Surveys
 - 8. Radioactive Source Inventory and Control
 - 9. Declared Pregnant Worker Program
- F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection
 - a. Initiated by the radiation protection organization
 - b. Assigned to the radiation protection organization

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are “searchable” so that the inspector can perform word searches.

If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)

- G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)
- H. List of active radiation work permits
- I. Radioactive source inventory list
 - a. All radioactive sources that are required to be leak tested

- b. All radioactive sources that meet the 10 CFR Part 20, Appendix E, Category 2, and above threshold. Please indicate the radioisotope, initial and current activity (w/assay date), and storage location for each applicable source.
- J. The last two leak test results for the radioactive sources inventoried and required to be leak tested. If applicable, specifically provide a list of all radioactive source(s) that have failed its leak test within the last two years
- K. A current listing of any non-fuel items stored within your pools, and if available, their appropriate dose rates (Contact / @ 30cm)
- L. Computer printout of radiological controlled area entries greater than 100 millirems since the previous inspection to the current inspection entrance date. The printout should include the date of entry, some form of worker identification, the radiation work permit used by the worker, dose accrued by the worker, and the electronic dosimeter dose alarm setpoint used during the entry (for Occupational Radiation Safety Performance Indicator verification in accordance with IP 71151).

3. In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

Date of Last Inspection: November 9, 2013

- A. List of contacts and telephone numbers for the following areas:
 - 1. Respiratory Protection Program
 - 2. Self-contained breathing apparatus (SCBA)
- B. Applicable organization charts
- C. Copies of audits, self-assessments, vendor, or Nuclear Procurement Issues Committee audits for contractor support, SCBA, and LERs written since date of last inspection related to:
 - 1. Installed air filtration systems
 - 2. Self-contained breathing apparatuses
- D. Procedure index for:
 - 1. Use and operation of continuous air monitors
 - 2. Use and operation of temporary air filtration units
 - 3. Respiratory protection
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
 - 1. Respiratory protection program
 - 2. Use of self contained breathing apparatuses
 - 3. Air quality testing for SCBAs
 - 4. Use of installed plant systems, such as containment purge, spent fuel pool ventilation, and auxiliary building ventilation
- F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the Airborne Monitoring Program, including:
 - 1. Continuous air monitors
 - 2. Self-contained breathing apparatuses
 - 3. Respiratory protection program

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are "searchable" so that the inspector can perform word searches.

- G. List of SCBA-qualified personnel - reactor operators and emergency response personnel
- H. Inspection records for self -contained breathing apparatuses staged in the plant for use since date of last inspection.
- I. Self-contained breathing apparatus training and qualification records for control room operators, shift supervisors, shift technical advisors, and operational support center personnel for the last year.

A selection of personnel may be asked to demonstrate proficiency in donning, doffing, and performance of functionality check for respiratory devices
- J. List of respirators (available for use) by type (APR, SCBA, PAPR, etc.), manufacturer, and model.