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

July 20, 2015

Mr. Oscar A. Limpias, Vice President-Nuclear
and Chief Nuclear Officer
Nebraska Public Power District
Cooper Nuclear Station
P.O. Box 98
Brownville, NE 68321-0098

SUBJECT: COOPER NUCLEAR STATION – NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000298/2015008

Dear Mr. Limpias:

On June 25, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution biennial inspection at the Cooper Nuclear Station. On that day, the NRC inspection team discussed the results of this inspection with you and members of your staff. The inspection team documented the results of this inspection in the enclosed report.

Based on the inspection sample, the inspection team determined that the Cooper Nuclear Station's corrective action program and your staff's implementation of the corrective action program were adequate to support nuclear safety.

In reviewing your corrective action program, the team assessed how well your staff identified problems at a low threshold, your staff's implementation of the station's process for prioritizing and evaluating these problems, and the effectiveness of corrective actions taken by the station to resolve these problems. The team also evaluated other processes your staff used to identify issues for resolution. These included your use of audits and self-assessments to identify latent problems and your incorporation of lessons learned from industry operating experience into station programs, processes, and procedures. The team determined that your station's performance in each of these areas supported nuclear safety.

Finally, the team determined that your station's management maintains a safety-conscious work environment in which your employees are willing to raise nuclear safety concerns through at least one of the several means available.

The NRC inspectors documented three findings of very low safety significance (Green) in this report. These findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations or significance of these NCV's, 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/

Eric Ruesch, Team Lead
Technical Support Services
Division of Reactor Safety

Docket: 50-298
License: DPR-46

Enclosure: Inspection Report 05000298/2015008
w/Attachment: Supplemental Information

cc w/encl: Electronic Distribution

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket(s):	50-298
License:	DPR-46
Report:	05000298/2015008
Licensee:	Nebraska Public Power District
Facility:	Cooper Nuclear Station
Location:	72676 648A Avenue Brownville, Nebraska 68321
Dates:	June 8-25, 2015
Team Lead:	R. Smith, Regional Operations Officer
Inspectors:	J. Melfi, Project Engineer C. Henderson, Resident Inspector P. Jayroe, Reactor Inspector M. Stafford, Project Engineer (Observer)
Approved By:	Eric Ruesch, Team Lead Technical Support Services Division of Reactor Safety

SUMMARY

IR 05000298/2015008; 06/08/2015 – 06/25/2015; Cooper Nuclear Station, Problem Identification and Resolution (Biennial)

The inspection activities described in this report were performed between June 8 and June 25, 2015, by three inspectors from the NRC's Region IV office and the resident inspector at Cooper Nuclear Station. The report documents three findings of very low safety significance (Green). All of these findings involved violations 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."

Assessment of Problem Identification and Resolution

Based on its inspection sample, the team concluded that the licensee maintained a corrective action program in which individuals generally identified issues at an appropriately low threshold. Once entered into the corrective action program, the licensee generally evaluated and addressed these issues appropriately and timely, commensurate with their safety significance. The licensee's corrective actions were generally effective, addressing the causes and extents of condition of problems.

The licensee appropriately evaluated industry-operating experience for relevance to the facility and entered applicable items in the corrective action program. The licensee incorporated industry and internal operating experience in its root cause and apparent cause evaluations. The licensee performed effective and self-critical nuclear oversight audits and self-assessments. The licensee maintained an effective process to ensure significant findings from these audits and self-assessments were addressed.

The licensee maintained a safety-conscious work environment in which personnel were willing to raise nuclear safety concerns without fear of retaliation.

Cornerstone: Mitigating Systems

- Green. The team identified a non-cited violation of Technical Specification 5.4.1.a regarding implementation of maintenance procedures for work on safety-related motor-operated valves (MOVs). Specifically, a degraded component within the actuator was not evaluated as acceptable to use as is before returning the valve to service. The Division 2 low-pressure coolant injection (LPCI) Throttle valve, RHR-MOV-MO27B, failed in the closed position during a surveillance test. The licensee's investigation revealed that the helical motor pinion gear in the Limitorque valve actuator broke in three parts. This failed pinion gear additionally caused damage to part of the motor shaft where the setscrew engaged the shaft to attach the pinion gear. The licensee's corrective action was to drill the setscrew hole slightly deeper, and reuse the motor shaft when reassembling the Limitorque motor actuator and returning the valve to an operable status. The licensee failed to document this process through an engineering evaluation to accept the setscrew and motor shaft repair use-as-is per their engineering change procedure. The evaluation was performed after the valve was returned to service and determined that the setscrew configuration was acceptable.

The licensee entered this issue into the corrective action program as Condition Report CR-CNS-2015-00880

The licensee's failure to perform an evaluation for a degraded condition when performing safety-related MOV maintenance in violation of Procedure 3-EN-DC-115, "Engineering Change Process," is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the performance deficiency resulted in the reuse of the motor shaft in the actuator to Valve RHR-MOV-MO27B, as acceptable to use-as-is even though a degraded condition existed, returning the valve to operable status without performing the required engineering evaluation. Using Inspection Manual Chapter 0609, Appendix A, issued June 19, 2012, the Significance Determination Process for Findings At Power, the inspectors determined the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of a function of a single train for greater than the technical specification (TS) allowed outage time; and (4) did not represent an actual loss of a function of one or more non-TS trains of equipment. The finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, the licensee failed to perform an evaluation of the setscrew location to ensure that that location was properly drilled and tapped. This was due to a lack of coordination between the maintenance and engineering groups [H.4]. (Section 4OA2.5.a)

- Green. The team reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," which occurred when the licensee failed to include specific instructions in work orders with respect to the use of lubrication during emergency diesel generator (EDG) fastener torquing. The failure to include specific lubrication instructions in work orders resulted in the inadequate torquing of bolting on the number 2 EDG and contributed to a lube oil leak during a surveillance run of the affected diesel. Procedures in effect during the time the fasteners were torqued required planners to include specific lubrication instructions in work orders for the EDGs. The licensee corrected the current issue by properly lubricating and torquing the fasteners for the right bank camshaft and restored the EDG 2 to operable status. The licensee entered this issue into the corrective action program as condition report CR-CNS-2014-06885.

  The failure to specify lubricants in EDG work order instructions involving fastener torquing, in violation of Procedure 7.2.53.12, "Cooper Bessemer Bolting and Torque Program," is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Additionally, if left uncorrected, it has the potential to lead to a more significant safety concerns, in that the failure to include these instructions in work orders has resulted in, and could continue to result in loose fasteners on the emergency diesel generator. Using Inspection Manual Chapter 0609, Appendix A, issued June 19, 2012, the Significance Determination Process for Findings At Power; the inspectors determined the

finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of a function of a single train for greater than the technical specification (TS) allowed outage time, and (4) did not represent an actual loss of a function of one or more non-TS trains of equipment. The finding has a cross-cutting aspect in the problem identification and resolution area due to the organization's failure to take effective corrective actions to address the deficiency after it was identified in a 2010 root cause evaluation and failure to recognize the ineffectiveness of the previous corrective actions until after the lube oil leak in 2014 (P.3). (Section 4OA2.5.b)

- Green. The team identified two examples of a non-cited violation of Technical Specification 3.3.1.1, "Reactor Protection System Instrumentation," required Action A, for the licensee's failure to place inoperable main steam isolation valve closure scram channels in trip within 12 hours when Surveillance Requirement 3.3.1.1.9 to perform channel functional testing was not met. Specifically, on January 31 and May 16, 2015, the licensee tested inboard main steam isolation valves MS-AOV-80A and MS-AOV-80B limit switches associated with main steam isolation valve closure scram channel multiple times prior to declaring them operable. The licensee did not evaluate for pre-conditioning of the limit switches to determine if the actual as-found condition was masked, and did not ensure the discrepancy was corrected, before repeating the surveillance test. This resulted in repetitive testing to achieve acceptable results that led to declaring the limit switches operable. The station did enter the required action statements for Technical Specification 3.3.1.1 for MS-AOV-80A limit switch A on May 16, 2015, and MS-AOV-80B limit switch A on May 19, 2015. All inboard main steam isolation valve limit switches in question were replaced during Planned Outage 2015-01 conducted from May 30 to June 1, 2015. The licensee entered this issue into the corrective action program as condition reports CR-CNS-2015-03456, CR-CNS-2015-03483, and CR-CNS-2015-03484.

  The licensee's failure to adequately assess operability during multiple performances of channel functional surveillance testing for reactor protection system main steam isolation valve closure scram function in violation of Technical Specification 3.3.1.1, "Reactor Protection System Instrumentation," is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the licensee did not evaluate for pre-conditioning of the limit switches to determine if the actual as-found condition was masked, and ensure the discrepancies were corrected, before repeating the surveillance test. This resulted in repetitive testing to achieve acceptable results that led to declaring the limit switches operable. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Finding At-Power," dated June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) because the finding: (1) did not affect a single reactor protection system trip signal to initiate a reactor scram and the function of other redundant trips or diverse methods of reactor shutdown (e.g. other automatic reactor protection system trips, alternate rod insertion, or manual reactor trip capacity); (2) did not involve control manipulations that unintentionally added positive reactivity (e.g., cold-water injection, inadvertent control rod movement, recirculation pumps speed control); and (3) did not result in a mismanagement of reactivity by the operator(s) (e.g., reactor power exceeding the licensed power limit, inability to anticipate and control changes in reactivity during crew operations). The finding has a

cross-cutting aspect in the area of human performance associated with procedural adherence because individuals did not follow processes, procedures, and work instructions [H.8]. (Section 4OA2.5.c)

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (71152)

The team based the following conclusions on a sample of corrective action documents that were open during the assessment period, which ranged from March 29, 2013, to the end of the on-site portion of this inspection on June 25, 2015.

.1 Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The team reviewed approximately 290 condition reports (CRs), including associated root cause analyses and apparent cause evaluations, from approximately 19,000 that the licensee had initiated or closed between March 29, 2013, and June 25, 2015. The majority of these were lower-level condition reports that did not require cause evaluations. The inspection sample focused on higher-significance condition reports for which the licensee evaluated and took actions to address the cause of the condition. In performing its review, the team evaluated whether the licensee had properly identified, characterized, and entered issues into the corrective action program, and whether the licensee had appropriately evaluated and resolved the issues in accordance with established programs, processes, and procedures. The team also reviewed these programs, processes, and procedures to determine if any issues existed that may have impaired their effectiveness.

The team reviewed a sample of performance metrics, system health reports, operability determinations, self-assessments, trending reports and metrics, and various other documents related to the licensee's corrective action program. The team evaluated the licensee's efforts in determining the scope of problems by reviewing selected logs, work orders, self-assessment results, audits, system health reports, action plans, and results from surveillance tests and preventive maintenance tasks. The team reviewed daily CRs and attended the licensee's condition review group and corrective action review board meetings to assess the reporting threshold and prioritization efforts, and to observe the corrective action program's interfaces with the operability assessment and work control processes. The team's review included an evaluation of whether the licensee considered the full extent of cause and extent of condition for problems, as well as a review of how the licensee assessed generic implications and previous occurrences of issues. The team assessed the timeliness and effectiveness of corrective actions, completed or planned, and looked for additional examples of problems similar to those the licensee had previously addressed. The team conducted interviews with plant personnel to identify other processes that may exist where problems may be identified and addressed outside the corrective action program.

The team reviewed corrective action documents that addressed past NRC-identified violations to evaluate whether corrective actions addressed the issues described in the inspection reports. The team reviewed a sample of corrective actions closed to other corrective action documents to ensure that the ultimate corrective actions remained

appropriate and timely. The team reviewed a sample of eight condition reports where the licensee had changed the significance level after initial classification to determine whether the level changes were in accordance with station procedure and that the conditions were appropriately addressed.

The team considered risk insights from both the NRC's and Cooper Nuclear Station's risk models to focus the sample selection and plant tours on risk-significant systems and components. The team focused a portion of its sample on the emergency diesel generators, which the team selected for a five-year in-depth review. The team conducted walk-downs of this system and other plant areas to assess whether licensee personnel identified problems at a low threshold and entered them into the corrective action program.

b. Assessments

1. Effectiveness of Problem Identification

During the 27-month inspection period, licensee staff generated approximately 19,000 condition reports. The team determined that most conditions that required generation of a condition report by Procedure 0-CNS-LI-102, "Corrective Action Process," Revision 0, and 0-EN-LI-102, "Corrective Action Process," Revision 20C7, had been appropriately entered into the corrective action program. However, the team noted some examples where the licensee failed to properly identify conditions in accordance with procedures:

- Condition Report CR-CNS-2015-03433 - initiated by the licensee after the team questioned whether CNS should have white tape establishing a standoff distance at the entrance to the personnel explosive detectors at the site access facility. However, the licensee failed to initiate a CR about the question asked by the team until challenged by the team the next day. The licensee also initiated CR-CNS-2015-03434 to identify their failure to initiate a CR when the team initially identified the issue. The licensee determined that the standoff tape was not required based on information from the vendor but security management did remind their security force of the importance of properly monitoring personnel as they use the personnel explosive detectors.

- Condition Report CR-CNS-2015-03514 - initiated after the team identified a lube oil leak on the Number 5 cylinder cover of Emergency Diesel Generator 2 following a monthly surveillance run. The licensee determined that the diesel maintained operability and ability to complete its 30-day mission time due to leak being within the capacity of lube oil supply for the diesel.

- Condition Report CR-CNS-2015-03803 - initiated by the licensee after the team questioned the potential fretting of the high and low fuel sensor wiring for the Emergency Operating Facility Diesel Generator. The licensee determined that the sensing lines were still providing proper indication and entered the condition into the work control process for repair in the future.

- Condition Reports CR-CNS-2015-3456, CR-CNS-2015-03483, and CR-CNS-2015-03484 - initiated by the licensee after the team reviewed condition reports CR-CNS-2015-00604 and CR-CNS-2015-02885. The team questioned the repetitive testing and whether the station had evaluated for pre-conditioning associated with Main Steam Isolation Valves A and B, MS-AOV-80A and MS-AOV-80B, main steam isolation valve closure scram channels during surveillance testing. A non-cited violation associated with this issue is discussed in more detail in Section 4OA2.5.c of this report.

- Intranet Document Control System 68177 - initiated as a method for procedural change by the licensee after the team reviewed Station Procedure 2.2.38.2, "Portable Heating System," Revision 16. The team questioned the use of the emergency diesel generator 2 Motor Control Center MCC-DG2 as power source for the portable heaters in the event of a fire in the emergency diesel generator room 1. The station's procedural change request was to add the following: If a fire caused the loss of the preferred source, motor control center Tango MCC-T, then MCC-DG2 should be used as the alternate source. The team determined the procedure change to be a clarification since a fire in emergency diesel generator room 1 would not have affected MCC-T.

Overall, the team concluded that the licensee generally maintained a low threshold for the formal identification of problems and entry into the corrective action program for evaluation. Licensee personnel initiated over 700 CRs per month during the inspection period. Most of the personnel interviewed by the team understood the requirements for condition report initiation; most expressed a willingness to enter newly identified issues into the corrective action program at a very low threshold.

2. Effectiveness of Prioritization and Evaluation of Issues

The sample of CRs reviewed by the team focused primarily on issues screened by the licensee as having higher-level significance, including those that received cause evaluations, those classified as significant conditions adverse to quality, and those that required engineering evaluations. The team also reviewed a number of condition reports that included or should have included immediate operability determinations to assess the quality, timeliness, and prioritization of these determinations.

The team identified some examples where the licensee failed to evaluate issues correctly:

- Condition Report CR-CNS-2015-03448 - initiated by the licensee after the team reviewed Condition Reports CR-CNS-2013-01185 and CR-CNS-2015-02440, and Station Procedure 2.0.1.3, "Time Critical Operator Action Control and Maintenance," Revision 4. The team's review determined that some required time critical operator actions were not contained in Station Procedure 2.0.1.3. The licensee had developed Station Procedure 2.0.1.3 to provide a process to capture credited operator actions, and both document and validate the actual timing of the operator action. The team concluded that the time critical operator actions that were omitted from Station

Procedure 2.0.1.3, could be accomplished because these actions were contained in other station procedures.

- Condition Report CR-CNS-2015-03804 - initiated by the licensee after the team identified a minor violation of the reportability requirements of 10 CFR Part 50.73 for the failure to submit a Licensee Event Report (LER) within 60 days. In October 2013, the licensee declared EDG number 1 inoperable after indications of a jacket water leak into the lube oil. These indications included a high sodium level from a lube oil sample taken in August 2013 and indications of water in the lube oil during a surveillance run in October. The licensee performed a borescope inspection and discovered that the source of the leak was a crack in the 1L cylinder head liner. Licensee repaired the diesel, returned it to service, and sent the cylinder head liner to a vendor for testing. The licensee received the vendor analysis in late 2013, completed a root cause evaluation (RCE) which was finalized in February 2014, and initiated a 60-day LER reportability clock after finalizing the RCE. Inspectors reviewed the LER that was submitted in April 2014, and found it to be accurate and adequately detailed. However, inspectors determined that when the initial lube oil sample was reviewed and the EDG was run (October 2013) the licensee had firm evidence at that time that the condition that had caused the EDG to be declared inoperable was in place beginning as early as August 2013. This would have met the reportability requirement of 10 CFR 50.73(a)(2)(i)(B) for operation with a condition prohibited by technical specifications. This issue was determined to be minor because the details of the LER were factually accurate and the delayed submittal did not affect NRC decision making.

- Condition Report CR-CNS-2015-00880 - initiated by the licensee after the team questioned why a use-as-is evaluation was not performed after a repair was made to RHR-MOV-MO27B. A non-cited violation associated with this issue is discussed in more detail in section 4OA2.5.a of this report.

- Condition Report CR-CNS-2015-03776 - initiated by the licensee after the team questioned the process the licensee used to ensure diesel fuel oil tanks maintained proper venting for all possible conditions. The team reviewed an operability determination performed by the licensee and determined a minor violation of the technical specifications 3.8.1.E, “AC Sources – Operating” for potential inoperability of both emergency diesel generators. This initial conclusion resulted from the failure of the licensee to properly document the process for transition from a Reasonable Expectation of Operability to Operable with Compensatory Measures and the fact the licensee had placed a new compensatory measure in place to ensure diesel fuel oil tank venting was maintained. After interviews with licensee personnel, a walk-down of the area, and observing that the licensee had in place an adverse weather procedure addressing the availability of proper venting of the storage tanks, the team concluded these compensatory measures were adequate. Therefore, this was a minor violation since operability of the EDGs was never lost.

The team additionally reviewed operability evaluations and reportability screenings as part of the assessment. The team noted that all of the operability evaluations

reviewed contained sufficient detail to support the conclusion with the exception of the above listed example. Operability evaluations supported by engineering analysis contained adequate bases for a reasonable expectation of operability, and supporting documentation consistently supported these decisions. Corrective actions for previous NRC-identified non-cited violations associated with operability determinations were adequate.

Overall, the team determined that the licensee's process for screening and prioritizing issues entered into the corrective action program supported nuclear safety. The licensee's operability determinations were consistent, accurately documented, and completed in accordance with procedures.

3. Effectiveness of Corrective Actions

In general, the corrective actions identified by the licensee to address adverse conditions were effective. However, the team identified the following example of a corrective action that was ineffective in resolving issues.

On August 17, 2010, the licensee discovered that 6 of 8 nuts retaining the EDG number 2 overspeed governor drive unit were loose. The licensee determined that the primary mechanical cause of the loose fasteners was the failure to lubricate them during the torquing process. The fasteners were not properly lubricated because of a lack of specific guidance to lubricate fastener threads in a 2009 work order to reinstall the overspeed governor. Several corrective actions were taken including the implementation of significant revisions to the EDG bolting procedure and revisions to the planning procedure to require that planners specify torque and lubrication requirements in work packages. In October 2014, a lube oil leak was discovered on EDG number 2 during a 110 percent load surveillance test. Loose bolting on the right bank camshaft thrust bearing cover caused the leak. According to licensee's timeline, these bolts were last torqued in 2011. The licensee determined that the apparent cause of the loose bolts was the failure to specify a thread lubricant in the work instructions for the 2011 maintenance that resulted in undertorqued bolts. This repetitive failure to specify lubricants in a work order for the number 2 EDG is an example of ineffective corrective actions. A non-cited violation associated with this issue is discussed in more detail in section 4OA2.5.b of this report.

Overall, the team concluded that the licensee generally identified effective corrective actions for the problems evaluated in the corrective action program. The licensee generally implemented these corrective actions in a timely manner, commensurate with their safety significance, and reviewed the effectiveness of the corrective actions appropriately.

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The team examined the licensee's program for reviewing industry operating experience, including reviewing the governing procedures. The team reviewed a sample of 15 industry operating experience communications and the associated site evaluations to assess whether the licensee had appropriately assessed the communications for

relevance to the facility. The team also reviewed assigned actions to determine whether they were appropriate.

b. Assessment

Overall, the team determined that the licensee appropriately evaluated industry-operating experience for its relevance to the facility. Operating experience information was incorporated into plant procedures and processes as appropriate.

Inspectors noted several examples of effective use of OE to identify or correct issues in the plant. These include:

- Corrective maintenance to the licensee's supplemental diesel generator after receiving a letter from the vendor identifying the possibility for catastrophic failures associated with piston slap rings.

- Corrective maintenance to the license's emergency diesel generators after receiving a part 21 notification about missing valve keeper seals on refurbished diesel generator cylinder heads.

- System walkdowns on EDG fuel oil lines in response to NRC-identified degradation of these lines at another utility.

- The licensee's review of NRC Information Notices related to process radiation monitors were effectively done.

The team further determined that the licensee appropriately evaluated industry-operating experience when performing root cause analysis and apparent cause evaluations. The licensee appropriately incorporated both internal and external operating experience into lessons learned for training and pre-job briefs.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The team reviewed a sample of 15 licensee self-assessments and audits to assess whether the licensee was regularly identifying performance trends and effectively addressing them. The team also reviewed audit reports to assess the effectiveness of assessments in specific areas. The specific self-assessment documents and audits reviewed are listed in Attachment 1.

b. Assessment

Overall, the team concluded that the licensee had an effective self-assessment and audit process. The team determined that self-assessments were self-critical and thorough enough to identify deficiencies.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The team interviewed 30 individuals in a one on one setting. The purpose of these interviews was (1) to evaluate the willingness of licensee staff to raise nuclear safety issues, either by initiating a condition report or by another method, (2) to evaluate the perceived effectiveness of the corrective action program at resolving identified problems, and (3) to evaluate the licensee's safety-conscious work environment (SCWE). The interview participants included personnel from operations, maintenance, radiation protection, chemistry, security, engineering, and projects. At the team's request, the licensee's regulatory affairs staff selected the participants blindly from these work groups, based partially on availability. To supplement these interviews, the team interviewed the Employee Concerns Program manager to assess her perception of the site employees' willingness to raise nuclear safety concerns. The team reviewed the Employee Concerns Program case log and select case files. The team also reviewed the results of the site's most recent safety culture survey, conducted in spring of 2015.

b. Assessment

1. Willingness to Raise Nuclear Safety Issues

All individuals interviewed indicated that they would raise nuclear safety concerns. All felt that their management was receptive to nuclear safety concerns and was willing to address them promptly. All of the interviewees further stated that if they were not satisfied with the response from their immediate supervisor, they had the ability to escalate the concern to a higher organizational level. Most expressed positive experiences after raising issues to their supervisors. All expressed positive experiences documenting most issues in condition reports.

2. Employee Concerns Program

All interviewees were aware of the Employee Concerns Program. Most explained that they had heard about the program through various means, such as posters, training, presentations, and discussion by supervisors or management at meetings. All interviewees stated that they would use Employee Concerns if they felt it was necessary. All expressed confidence that their confidentiality would be maintained if they brought issues to Employee Concerns.

3. Preventing or Mitigating Perceptions of Retaliation

When asked if there have been any instances where individuals experienced retaliation or other negative reaction for raising issues, all individuals interviewed stated that they had neither experienced nor heard of an instance of retaliation, harassment, intimidation or discrimination at the site. The team determined that processes in place to mitigate these issues were being successfully implemented.

The team reviewed several recently written anonymous condition reports that addressed employees' concerns that they were not being treated with dignity and respect. The licensee entered this observation into the corrective action program

as CR-CNS-2015-03447. At the conclusion of the inspection, station management was developing actions to address this theme.

.5 Findings

a. Failure to Evaluate a Valve Degraded Condition before Returning the Valve to Service

Introduction. The team identified a non-cited violation of Technical Specification 5.4.1.a regarding implementation of maintenance procedures for work on safety-related motor-operated valves (MOVs). Specifically, a degraded component within the actuator was not evaluated as acceptable to use as-is before returning the valve to service.

Description. On November 5, 2015, the Division 2 low-pressure coolant injection (LPCI) throttle valve, RHR-MOV-MO27B, failed in the closed position during a surveillance test. This valve has an active safety function to throttle flow during accident conditions. The licensee's investigation revealed that the helical motor pinion gear in the Limitorque valve actuator broke in three parts. As part of the internals of a Limitorque actuator, the motor pinon gear interfaces with a worm shaft to transmit torque to the worm shaft to move the valve stem. The helical pinion gear broke off the motor shaft, which allowed the motor to spin without transmitting torque to the worm gear. Some damage to the motor shaft occurred when the pinion gear broke where the pinion gear setscrew secures to the motor shaft.

The pinion gear is normally secured onto the motor shaft by a shaft key and key-way arrangement that prevents radial movement and by a setscrew through the pinon gear to prevent axial movement. The key-way arrangement is provided by the manufacturer, but the setscrew placement is made by the licensee. To place the setscrew, the motor shaft is partially drilled into to insert a setscrew through the pinon gear. Due to the dimensional fit-up of the motor shaft and the pinon gear, the location of the drilled hole is on the end of the motor shaft, with part of the drilled area just past the edge of the shaft. When the pinion gear failed, the setscrew damaged part of the motor shaft. The licensee drilled the setscrew hole slightly deeper, and reused the motor shaft when reassembling the Limitorque motor actuator and returning the valve to an operable status.

The team questioned if the damage on the old motor shaft was evaluated to be acceptable to use as-is in accordance with Procedure 3-EN-DC-115, "Engineering Change Process." Step 15.5.7 of Procedure 7.5.13, "SB-0 through SB-4 MOV Refurbishment," revision 14, has the licensee verify that the tap drill size is to the proper depth. When the pinion gear broke, since some of the motor shaft metal where the setscrew is located was damaged, the motor pinion gear was not properly drilled and tapped. To reuse the motor shaft, an engineering evaluation per 3-EN-DC-115 needed to be performed. The licensee had not performed an evaluation on whether it was acceptable to use the motor shaft as-is. The need to generate an accept-as-is disposition was not recognized by the licensee before declaring the valve operable. This condition was brought to the licensee's attention by the inspectors. The licensee documented an engineering evaluation to accept the setscrew and motor shaft repair using Procedure 3-EN-DC-115, as noted in CR-CNS-2015-00880. The evaluation showed that the setscrew configuration was acceptable. The team determined through interviews with licensee personnel in maintenance and engineering that their effort was to determine the cause of the pinion failure and restoring the valve to operable status.

They had failed to communicate the need for evaluation for reusing the shaft in its degraded condition.

The proper placement of the setscrew for the pinon gear on the motor shaft is critical to ensure that the actuator would operate when needed. The team noted that, as documented in CR-CNS-2006-07490, the licensee described a significant condition adverse to quality related to securing the pinion gears onto Limitorque motor shafts. At that time, pinion gears were found to be moving axially along several different Limitorque motor shafts. The proper securing of the setscrew was recognized as important to prevent axial movement of the pinion gear. The licensee's corrective actions included improvements to the maintenance procedures, additional training to personnel performing valve actuator maintenance, and reworking of the degraded actuators to ensure adequate alignment and securing of the pinion gear assembly. The team concluded from its inspection that, although the licensee had taken the corrective actions to prevent recurrence from the 2006 root cause evaluation, the licensee failed to apply these maintenance practices and engineering evaluation for the as-left condition.

Analysis. The licensee's failure to perform an evaluation for a degraded condition when performing safety-related MOV maintenance in violation of Procedure 3-EN-DC-115, "Engineering Change Process," is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the performance deficiency resulted in the reuse of the motor shaft in the actuator to Valve RHR-MOV-MO27B, as acceptable to use as-is even though a degraded condition existed, declaring the valve operable without performing the required engineering evaluation. Using Inspection Manual Chapter 0609, Appendix A, issued June 19, 2012, the Significance Determination Process for Findings At Power, the inspectors determined the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of a function of a single train for greater than the technical specification (TS) allowed outage time, and (4) did not represent an actual loss of a function of one or more non-TS trains of equipment. The finding has a cross-cutting aspect in the area of human performance associated with Teamwork: Individuals and work groups communicate and coordinate their activities within and across organizational boundaries to ensure nuclear safety is maintained. Specifically, the licensee failed to perform an evaluation of the setscrew location to ensure that that location was properly drilled and tapped. This was due to a lack of coordination between the maintenance and engineering groups [H.4].

Enforcement. Technical Specification 5.4.1.a requires in part, that written procedures be established, implemented, and maintained covering the activities specified in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Appendix A, Section 9(a), requires that maintenance affecting the performance of safety-related equipment should be performed in accordance with written procedures. Contrary to this, on November 6, 2014, the licensee failed to follow maintenance procedures when repairing Valve RHR-MOV-MO27B. Specifically, the end of the motor shaft was degraded when a motor pinion gear broke, and the licensee reused the same motor shaft when reassembling the valve actuator. The damaged area was drilled slightly

deeper, and placed in service. Procedure 7.5.13 requires workers to ensure the setscrew hole is properly drilled and tapped. With the damaged shaft, it required an evaluation to ensure it was properly drilled. The licensee failed to evaluate the motor shaft degradation per 3-EN-DC-115, "Engineering Change Process," for continued use after a pinion gear broke, resulting in an unknown condition of the valve. As a corrective action the licensee determined by an evaluation that the setscrew configuration was acceptable. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy, because it was of very low safety significance (Green) and it was entered into the licensee's corrective action program as Condition Report CR-CNS-2015-00880. (NCV 05000298/2015008-01, "Failure to Evaluate a Valve Degraded Condition before Returning the Valve to Service")

b. Failure to Adequately Torque Fasteners on Emergency Diesel Generator Number 2

Introduction. The team reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to include specific instructions in work orders with respect to the use of lubrication during Emergency Diesel Generator (EDG) fastener torquing. The failure to include specific lubrication instructions in work orders resulted in the inadequate torquing of bolting on the Number 2 EDG and contributed to a lube oil leak during a surveillance run of the affected diesel. Procedures in effect in 2011 required planners to include specific lubrication instructions in work orders for fasteners to be torqued adequately for the EDGs.

Description. In October 2014 during a 24-month surveillance run a lube oil leak was discovered emanating from the right bank camshaft thrust bearing cover of the number 2 EDG. It was determined that the cover was loose, with some bolts missing and others loose. The licensee completed an apparent cause evaluation and determined that the bolts in question were torqued in the 2011 timeframe, and that they had been torqued without lubricating the threads. This resulted in an under torquing of the bolts and contributed to their eventual loosening. This event is similar to a 2009-2010 event in which loose bolts were discovered on the overspeed governor drive unit of the same diesel generator. The licensee performed a cause evaluation for the loose bolts on the overspeed drive governor and identified one of the two root causes as under-torqued bolts due to no lubrication. Both the 2010 and 2014 cause evaluations identified a lack of specific direction in work orders as the cause of the lack of lubrication of the fasteners. Procedure 7.2.53.12, "Cooper Bessemer Bolting and Torque Program" specifically requires (and has since at least 2010) that work orders specify lubricants in torquing instructions. Inspectors spot-checked EDG related work orders completed in 2013 and noted a lack of specificity with respect to thread lubricants on torquing steps in some work orders. The licensee corrected the current issue by properly lubricating and torquing the fasteners for the right bank camshaft, performed an extent of condition for other EDG fasteners for both EDGs and restored the EDG 2 to operable status. The licensee entered this issue into the corrective action program as condition report CR-CNS-2014-06885.

Analysis. The failure to specify lubricants in EDG work order instructions involving fastener torquing is a violation of Procedure 7.2.53.12, "Cooper Bessemer Bolting and Torque Program" and is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated

with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Additionally, if left uncorrected, it has the potential to lead to a more significant safety concern, in that the failure to include these instructions in work orders has resulted in, could continue to result in loose fasteners on the emergency diesel generator, and could pose a threat to this important safety system. Using Inspection Manual Chapter 0609, Appendix A, issued June 19, 2012, the Significance Determination Process for Findings At Power, the inspectors determined the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of a function of a single train for greater than the technical specification (TS) allowed outage time, and (4) did not represent an actual loss of a function of one or more non-TS trains of equipment. Inspectors determined that the finding was self-revealing because the failure to adequately torque EDG fasteners contributed to the fasteners falling off the diesel during a surveillance test and a subsequent loss of lube oil resulting in the failure of the surveillance test. The inadequate torquing occurred in 2011 and was not uncovered until a sequence of unrelated maintenance and post-maintenance tests caused enough vibrations to shake it loose. The finding has a cross-cutting aspect in the problem identification and resolution area due to the organization's failure to take effective corrective actions to address the deficiency after it was identified in a 2010 root cause evaluation and failure to recognize the ineffectiveness of the previous corrective actions until after the lube oil leak in 2014 (P.3).

Enforcement. 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, or drawings." Contrary to the above, between 2010 and 2014, the licensee failed to accomplish activities affecting quality in accordance with documented instructions, procedures, or drawings, of a type appropriate to the circumstances. Specifically, licensee personnel failed to follow Procedure 7.2.53.12 step 2.2, which requires that work instructions give specific lubricants required to perform the specified work. As a result, licensee personnel did not consistently specify in work orders the required lubricants to be used when torquing fasteners. This resulted in some cases of bolting becoming loose and challenging the operability of the number 2 emergency diesel generator. To correct this condition, the licensee properly lubricated and torqued the loose fasteners and verified that the condition did not exist on other EDG fasteners. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy, because it was of very low safety significance (Green) and it was entered into the licensee's corrective action program as condition report CR-CNS-2014-06885, (NCV 05000298/2015008-02, "Failure to Adequately Torque Fasteners on Emergency Diesel Generator Number 2.")

c. Main Steam Isolation Valve Scram Closure Condition Prohibited By Technical Specifications

Introduction. The team identified two examples of a non-cited violation of Technical Specification 3.3.1.1, "Reactor Protection System Instrumentation," Action A, for the licensee's failure to place inoperable main steam isolation valve closure scram channels

in trip within 12 hours when Surveillance Requirement 3.3.1.1.9 to perform channel functional test was not met.

Description. The station performed the main steam isolation valve closure scram channel functional tests in accordance with Station Procedure 6.MS.201, "Main Steam Isolation Valve Operability Test (IST)," Revisions 15, 16, and 17, on January 31 and May 16, 2015. The purpose of this procedure was to provide instructions for station personnel on how to perform a closure-timing test, a channel functional test of the main steam isolation valve not-full-open logic, and a spring-only closure test of the main steam isolation valves. The procedure satisfies the partial close exercise test, full stroke time closed test, and fail safe test requirements of the In-service Testing Program for the main steam isolation valves. Section 6, "MSIV Not Full Open Logic Test," performs the channel functional test required by Surveillance Requirement 3.3.1.1.9 without affecting main steam flow through the following caution: Depressing main steam isolation valve test button for greater than 20 seconds may affect main steam flow, which could cause a reactor and/or Group 1 isolation. Section 4, "MSIV Timing Tests," performs the full stroke time closed test in accordance with the In-service Testing Program and was credited with meeting the requirements of Surveillance Requirement 3.3.1.1.9.

> Example 1: On January 31, 2015, the station conducted Surveillance Procedure 6.MS.201, Revisions 15 and 16, Section 6 and Section 4 under Work Order 4944479. The Surveillance Procedure 6.MS.201, Revision 16, removed the 20 second limitation to support closing of the main steam isolation valves after reducing reactor power to less than 70 percent contained in Section 6. During the performance of Surveillance Procedure 6.MS.201, Revision 15 and 16, inboard main steam isolation valve MS-AOV-80A limit switch A failed three of the four surveillance tests. Section 6 surveillance testing was conducted three times unsatisfactorily, and the fourth surveillance test conducted under Section 4 was completed satisfactorily. In each of the test failures the associated reactor protection relay 5A-K3A did not drop out as required and close valve position indication green light did not illuminate.
>
> The station performed Failure Modes and Effects Analysis of the testing failures and identified MS-AOV-A080A limit switch A was responsible for both relay 5A-K3A actuation and the position indication green light associated with the valve, making it the most likely cause of the three failures. Satisfactory testing of outboard main steam isolation valve MS-AOV-86A limit switch A verified relay 5A-K3A was operable, given relay 5A-K3A was a common relay for MS-AOV-A080A and MS-AOV-86A limit switch A. The satisfactory surveillance test conducted under Section 4 of MS-AOV-80A verified proper operation of the valve. Section 4 of the procedure utilizes the control switch instead of the test push button to stroke the valve used in Section 6. Section 4 resulted in MS-AOV-A080A stroking within it's required time of 3 to 5 seconds, and resulted in relay 5A-K3A dropping out and proper position indication with the green light illuminated. The Section 4 test supported the theory that the associated limit switch A was not completely failed, but was not consistently returning to its normal spring actuated position during valve stroking (i.e. sticking). The station declared MS-AOV-080A limit switch A and associated main steam isolation valve closure scram channel operable. Additionally, inboard main steam isolation valve MS-AOV-80C limit switch A failed both 6.MS.201, Revision 16, Section 4 and 6 surveillance testing. The station declared MS-AOV-80C limit switch

inoperable and entered the requirements of Technical Specification 3.3.1.1, Action A.1 for placing the main steam isolation valve closure scram channel in trip within 12 hours when Surveillance Requirement 3.3.1.1.9 was not met. The Failure Modes and Effects Analysis for MS-AOV-80C failure identified the associated limit switch was the most likely cause of the surveillance test failures.

The licensee initiated Condition Report CR-CNS-2015-00604 to capture this issue in the station's corrective action program. As part of the corrective actions associated with failure of MS-AOV-080C, the station revised Surveillance Procedure 6.MS.201. Surveillance Procedure 6.MS.201, Revision 17, provided guidance to address installation and subsequent removal of a fuse associated with MS-AOV-80C isolation valve closure scram channel under Technical Specification 3.0.5. Technical Specification 3.0.5 allows equipment removed from service or declared inoperable to comply with actions to be returned to service under administrative controls solely to perform testing required to demonstrate its operability or the operability of other equipment.

Example 2: On May 16, 2015, the station conducted Surveillance Procedure 6.MS.201, Revision 17, Section 6 and Section 4 under Work Order 4946831. During performance of Surveillance Procedure 6.MS.201, Revision 17 MS-AOV-80A limit switch A failed both Section 6 and Section 4 of the procedure. Inboard main steam isolation valve MS-AOV-80B failed Section 6 and was completed satisfactorily for Section 4. The station declared MS-AOV-80A inoperable and entered the requirements of Technical Specification 3.3.1.1, Action A.1 for placing the main steam isolation valve closure scram channel in trip within 12 hours. The station declared MS-AOV-80B main steam isolation valve closure scram channel operable based on the reasonable expectation limit switch A would function as required. The reasonable expectation was based on satisfactory completion of Section 4 surveillance testing and no unacceptable pre-conditioning concerns for reactor protection relay 5A-K3E, and MS-AOV-80B limit switch A.

The licensee initiated Condition Report CR-CNS-2015-02885 to capture this issue in the station's corrective action program. As part of the corrective actions, the station entered the prompt operability evaluation process in accordance with Station Procedure 0.5OPS, "Operations Review of Condition Reports/Operability Determination," Revision 53. On May 19, 2015, the station determined the failure mechanism was not fully understood for MS-AOV-80B limit switch A and reasonable expectation of operability was not achievable. The station declared MS-AOV-80B main steam isolation valve closure scram channel was inoperable and entered Technical Specification 3.3.1.1, Action A.2, for placing the reactor protection system channel A in trip within 12 hours. This resulted in the station inserting a half scram into the reactor protection system. Subsequently, all inboard main steam isolation valves limit switches in question were replaced during Planned Outage 2015-01 conducted from May 30 to June 1, 2015.

The team reviewed Condition Reports CR-CNS-2015-00604 and CR-CNS-2015-02885, Station Procedure 0.40, "Work Control Program, Revision 88 and 89, and Station Procedure 0.26, "Surveillance Program," Revision 67. The team identified that the station did not document a pre-condition evaluation on January 31, 2015, for MS-AOV-80A limit switch A or an adequate pre-condition evaluation on May 16, 2015,

for MS-AOV-80B limit switch A in accordance with Station Procedure 0.40. The station only evaluated the pre-conditioning associated with the electrical contacts related to the limit switches in question, and provided the electrical contacts did not change state during the multiple surveillance testing conducted on January 31, 2015 and May 16, 2015. The station determined this was acceptable pre-conditioning of the MS-AOV-80A and MS-AOV-80B main steam isolation valve closure valve scram. However, the station did not evaluate the mechanical portion of the limit switches to determine if the as-found condition was masked because of the multiple surveillance tests conducted.

The team concluded the multiple surveillance tests would have masked as-found condition of MS-AOV-80A and MS-AOV-80B limit switches A. Additionally, the team did not identify any corrective actions prior to Planned Outage 2015-01 to correct the issues identified during prior repeat surveillance testing on January 31 and May 16, 2015. Station Procedure 0.26 required the station to correct the issue before repeating a surveillance test and repetitive testing to achieve acceptable results without correcting the problem from a previous test was not an acceptable means for establishing or verifying operability.

The licensee initiated Condition Reports CR-CNS-2015-03456, CR-CNS-2015-03483, and CR-CNS-2015-03484 to capture these issues in the station's corrective action program.

Analysis. The licensee's failure to adequately assess operability during multiple performances of channel functional surveillance testing for reactor protection system main steam isolation valve closure scram function in violation of Technical Specification 3.3.1.1, "Reactor Protection System Instrumentation," is a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the licensee did not evaluate for pre-conditioning of the limit switches to determine if the actual as-found condition were masked and ensured the discrepancy were corrected before repeating the surveillance test. This resulted in repetitive testing to achieve acceptable results that led to declaring the limit switches operable. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Finding At-Power," dated June 19, 2012, inspectors determined that the finding was of very low safety significance (Green) because the finding: (1) did not affect a single reactor protection system trip signal to initiate a reactor scram and the function of other redundant trips or diverse methods of reactor shutdown (e.g. other automatic reactor protection system trips, alternate rod insertion, or manual reactor trip capacity); (2) did not involve control manipulations that unintentionally added positive reactivity (e.g., cold-water injection, inadvertent control rod movement, recirculation pumps speed control); and (3) did not result in a mismanagement of reactivity by the operator(s) (e.g. reactor power exceeding the licensed power limit, inability to anticipate and control changes in reactivity during crew operations). The finding has a cross-cutting aspect in the area of human performance associated with procedural adherence because individuals did not follow processes, procedures, and work instructions [H.8].

Enforcement. Technical Specification 3.3.1.1, "Reactor Protection System Instrumentation," Action A.1 requires that inoperable main steam isolation valve scram closure channel(s) be placed in trip or Action A.2 place the associated trip system in trip within 12 hours. Contrary to the above, from January 31 to May 16, 2015, and May 16 to May 19, 2015, the licensee did not place main steam isolation valve closure scram channel associated with inboard main steam isolation valves MS-AOV-080A and MS-AOV-080B limit switch A in a trip status or place the associated trip system in trip within 12 hours of failing to meet Surveillance Requirement 3.3.1.1.9 to perform a channel functional test. The station did enter the required action statements for Technical Specification 3.3.1.1 for MS-AOV-080A limit switch A on May 16, 2015 and MS-AOV-080B limit switch A on May 19, 2015. All inboard main steam isolation valves limit switches in question were replaced during Planned Outage 2015-01 conducted from May 30 to June 1, 2015. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2.a of the NRC Enforcement Policy, because it was of very low safety significance (Green) and it was entered into the licensee's corrective action program as Condition Reports CR-CNS-2015-03456, CR-CNS-2015-03483, and CR-CNS-2015-03484. (NCV 05000298/2015008-03, "Main Steam Isolation Valve Scram Closure Condition Prohibited By Technical Specifications")

4OA6 Meetings, Including Exit

Exit Meeting Summary

On June 25, 2015, the inspectors presented the inspection results to Mr. O. Limpias, 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.

ATTACHMENTS:
1. Supplemental Information
2. Information Request

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Bacon, Training Manager
D. Buman, Director of Engineering
B. Chapin, Maintenance Manager
T. Chard, Quality Assurance Manager
L. Dewhirst, CAP Manager
K. Dia, System Engineer Manager
J. Ellers, Electrical Systems and I&C Engineering Supervisor
R. Estrada, Design Engineering Manager
M. Ferguson, Emergency Preparedness Manager
J. Flaherty, Senior Licensing Engineer
G. Garderner, NSSS Engineering Supervisor
K. Higginbotham, General Manger of Plant Operations
J. Houston, Production Manager
J. Kerner, SRV System Engineer
D. Kimball, Director of Nuclear Oversight
R. Kouba, Senior Reactor Operator
O. Limpias, Site Vice-President
M. Metzger, EDG Systems Engineer
D. Montgomery, Senior Performance Improvement Analyst
R. Penfield, Director Nuclear Safety Assurance
J. Reimers, BOP Engineer Supervisor
J. Shaw, Licensing Manager
B. Swobada, Engineer
P. Tetrick, Work Control Manager
D. Van Der Kamp, Licensing
A. Walters, Chemistry Manager

NRC Personnel

J. Nance, Acting Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000298/2015008-01	NCV	Failure to Evaluate a Valve Degraded Condition before Returning the Valve to Service (Section 4OA2.5.a)
05000298/2015008-02	NCV	Failure to Adequately Torque Fasteners on Emergency Diesel Generator Number 2 (Section 4OA2.5.b)
05000298/2015008-03	NCV	Main Steam Isolation Valve Scram Closure Condition Prohibited By Technical Specifications (Section 4OA2.5.c)

LIST OF DOCUMENTS REVIEWED

Procedure Number	Title	Revision
0-CNS-LI-102	Corrective Action Process	0
0-EN-LI-102	Corrective Action Process	20C7
0.5.OPS	Operations Review Of Condition Reports/Operability Determination	52
0-EN-LI-121	Trending And Performance Review Process	13C3
0-EN-LI-118	Root Cause Evaluation Process	18C4
0-EN-LI-119	Apparent Cause Evaluation (ACE) Process	16C3
0-EN-LI-102-02	CR Closure Quality	8C0
0-EN-FAP-LI-003	Corrective Action Review Board (CARB) Process	8C2
2.4HVAC	Building Ventilation Abnormal	21
2.3.1	Information Sheet	63
11.CS-DEDICATED-MEDIA	Dedicated Use Of Media	8
11.CS-DEDICATED-MEDIA	Dedicated Use Of Media	9
0-EN-QV-112	Learning Opportunity Review Process	8C0
OTP810	Operations Department Examination Security	16
11.7	Software Work Package	39
1.1	Simulator Work Package	11
NTP7.2	Simulator Configuration Management	9
0.48	Employee Concerns Program	10
2.2.7	Condensate Storage and Transfer System	57
6.SC.201	Secondary Containment (Reactor Building H&V) Valve Operability Test	31
2.2.85	HVAC motor Generator Sets	23
2.2.38.2	Portable Heating System	16
2.2.18	4160 V Auxiliary Power Distribution System	179
2.3_R-1	Panel R – Annunciator R-1	16
2.3_R-2	Panel R – Annunciator R-2	18
6.MS.201	Main Steam Isolation Valve Operability Test (IST)	15
6.MS.201	Main Steam Isolation Valve Operability Test (IST)	16

Procedure Number	Title	Revision
6.MS.201	Main Steam Isolation Valve Operability Test (IST)	17
0.26	Surveillance Program	67
2.0.1.3	Time Critical Operator Action Control and Maintenance	4
EN-DC-205	Maintenance Rule Monitoring	3C0
7.0.1.7	Troubleshooting Plant Equipment	15
0.40	Work Control Program	89
6.HPCI.103	HPCI IST and 92 Day Test Mode Surveillance Operation	52
0-CNS-61	CNS Reactivity Management Program	26
6.1EE.302	4160V Bus 1F Undervoltage Relay and Relay Timer Functional Test (DIV 1)	34
6.2EE.302	4160V Bus 1G Undervoltage Relay and Relay Timer Functional Test (DIV 2)	31
3-EN-DC-112	Engineering Change Request and Project Initiation Process	5C1
0.40	Work Control Program	88
14.24.4	HPCI Auxiliary Cooling Supply Pressure Control Loop	0
Emergency Procedure 5.1	Operation During Weather Watches and Warnings	13
Maintenance Procedure 7.0.10	Railroad Airlock Door Operations	23
Conduct of Operations Procedure 2.0.3	Conduct of Operations	87
Administrative Procedure 0.41	Seismic Housekeeping	11
Conduct of Operations Procedure 2.0.5	Reports to the NRC Operations Center	43
Maintenance Procedure 7.2.53.12	Cooper Bessemer Bolting and Torque Program	10
Administrative Procedure 0 – Barrier	Barrier Control Process	9

Procedure

Number	Title	Revision
System Operating Procedure 2.2.20.2	Operation of Diesel Generators from Diesel Generator Room	58
3-EN-DC-150	Condition Monitoring of Maintenance Rule Structures	6C2
Administrative Procedure 0.2.7.1	Periodic Structural Inspection of Structures	5

Calculations

Number	Title	Revision
NEDC 12-069	Battery Room Low Temperature Study	0
002N5242	Cooper Cycle 28 SRV Setpoint Study	0
EC 14-012	Control Building Essential Ventilation System Calculation Corrections	0
ER 2015-011	Sensitivity Analysis of Diesel Generator Storage Tank Vent Function following a Tornado Missile Strike	0

Condition Reports (CRs)

CR-CNS-2006-07490	CR-CNS-2013-03856	CR-CNS-2014-01158	CR-CNS-2014-08733
CR-CNS-2007-01820	CR-CNS-2013-03880	CR-CNS-2014-01158	CR-CNS-2014-08860
CR-CNS-2008-05389	CR-CNS-2013-03932	CR-CNS-2014-01255	CR-CNS-2015-00268
CR-CNS-2010-01996	CR-CNS-2013-03942	CR-CNS-2014-01302	CR-CNS-2015-00323
CR-CNS-2010-02022	CR-CNS-2013-04021	CR-CNS-2014-01339	CR-CNS-2015-00325
CR-CNS-2010-02521	CR-CNS-2013-04081	CR-CNS-2014-01341	CR-CNS-2015-00489
CR-CNS-2010-02575	CR-CNS-2013-04168	CR-CNS-2014-01593	CR-CNS-2015-00490
CR-CNS-2010-05924	CR-CNS-2013-04241	CR-CNS-2014-01828	CR-CNS-2015-00491
CR-CNS-2010-05943	CR-CNS-2013-04327	CR-CNS-2014-01868	CR-CNS-2015-00604
CR-CNS-2010-08373	CR-CNS-2013-04347	CR-CNS-2014-01929	CR-CNS-2015-00608
CR-CNS-2011-03406	CR-CNS-2013-04347	CR-CNS-2014-01991	CR-CNS-2015-00688
CR-CNS-2011-04556	CR-CNS-2013-04355	CR-CNS-2014-02208	CR-CNS-2015-00837
CR-CNS-2011-04589	CR-CNS-2013-04700	CR-CNS-2014-02226	CR-CNS-2015-00838
CR-CNS-2011-05602	CR-CNS-2013-04843	CR-CNS-2014-02354	CR-CNS-2015-00841
CR-CNS-2011-07143	CR-CNS-2013-05492	CR-CNS-2014-02370	CR-CNS-2015-01093
CR-CNS-2011-08707	CR-CNS-2013-05546	CR-CNS-2014-02557	CR-CNS-2015-01179
CR-CNS-2011-09551	CR-CNS-2013-05548	CR-CNS-2014-02740	CR-CNS-2015-01195
CR-CNS-2011-11791	CR-CNS-2013-05748	CR-CNS-2014-02801	CR-CNS-2015-01223
CR-CNS-2012-00724	CR-CNS-2013-05749	CR-CNS-2014-02895	CR-CNS-2015-01274
CR-CNS-2012-01056	CR-CNS-2013-05866	CR-CNS-2014-02989	CR-CNS-2015-01471
CR-CNS-2012-01056	CR-CNS-2013-06031	CR-CNS-2014-03000	CR-CNS-2015-01630
CR-CNS-2012-02532	CR-CNS-2013-06044	CR-CNS-2014-03008	CR-CNS-2015-01878
CR-CNS-2012-03238	CR-CNS-2013-06145	CR-CNS-2014-03090	CR-CNS-2015-02090
CR-CNS-2012-04628	CR-CNS-2013-06149	CR-CNS-2014-03361	CR-CNS-2015-02366
CR-CNS-2012-05918	CR-CNS-2013-06173	CR-CNS-2014-03387	CR-CNS-2015-02408
CR-CNS-2012-05937	CR-CNS-2013-06203	CR-CNS-2014-03472	CR-CNS-2015-02440
CR-CNS-2012-06336	CR-CNS-2013-06286	CR-CNS-2014-03764	CR-CNS-2015-02499
CR-CNS-2013-00044	CR-CNS-2013-06367	CR-CNS-2014-03914	CR-CNS-2015-02885
CR-CNS-2013-00105	CR-CNS-2013-06401	CR-CNS-2014-03915	CR-CNS-2015-02947
CR-CNS-2013-00149	CR-CNS-2013-06455	CR-CNS-2014-03917	CR-CNS-2015-03319
CR-CNS-2013-00161	CR-CNS-2013-06590	CR-CNS-2014-03919	CR-CNS-2015-03326
CR-CNS-2013-00292	CR-CNS-2013-06743	CR-CNS-2014-03950	CR-CNS-2015-03343
CR-CNS-2013-00386	CR-CNS-2013-06832	CR-CNS-2014-04231	CR-CNS-2015-03353
CR-CNS-2013-00466	CR-CNS-2013-06861	CR-CNS-2014-04252	CR-CNS-2015-03359
CR-CNS-2013-00474	CR-CNS-2013-06870	CR-CNS-2014-04341	CR-CNS-2015-03366
CR-CNS-2013-00529	CR-CNS-2013-06870	CR-CNS-2014-04380	CR-CNS-2015-03368
CR-CNS-2013-00548	CR-CNS-2013-06949	CR-CNS-2014-04523	CR-CNS-2015-03376
CR-CNS-2013-00579	CR-CNS-2013-06955	CR-CNS-2014-04552	CR-CNS-2015-03383
CR-CNS-2013-00619	CR-CNS-2013-07149	CR-CNS-2014-04557	CR-CNS-2015-03389
CR-CNS-2013-00698	CR-CNS-2013-07357	CR-CNS-2014-04598	CR-CNS-2015-03406
CR-CNS-2013-00700	CR-CNS-2013-07372	CR-CNS-2014-04765	CR-CNS-2015-03419
CR-CNS-2013-00890	CR-CNS-2013-07384	CR-CNS-2014-05125	CR-CNS-2015-03427
CR-CNS-2013-00936	CR-CNS-2013-07506	CR-CNS-2014-05127	CR-CNS-2015-03428
CR-CNS-2013-01212	CR-CNS-2013-07525	CR-CNS-2014-05207	CR-CNS-2015-03430
CR-CNS-2013-01455	CR-CNS-2013-07540	CR-CNS-2014-05366	CR-CNS-2015-03432
CR-CNS-2013-01456	CR-CNS-2013-07567	CR-CNS-2014-05480	CR-CNS-2015-03433
CR-CNS-2013-01512	CR-CNS-2013-07590	CR-CNS-2014-05609	CR-CNS-2015-03434
CR-CNS-2013-01525	CR-CNS-2013-07599	CR-CNS-2014-05620	CR-CNS-2015-03440
CR-CNS-2013-01553	CR-CNS-2013-07700	CR-CNS-2014-06191	CR-CNS-2015-03443

CR-CNS-2013-01769	CR-CNS-2013-07711	CR-CNS-2014-06299	CR-CNS-2015-03447
CR-CNS-2013-01913	CR-CNS-2013-07712	CR-CNS-2014-06533	CR-CNS-2015-03448
CR-CNS-2013-02043	CR-CNS-2013-07880	CR-CNS-2014-06548	CR-CNS-2015-03456
CR-CNS-2013-02324	CR-CNS-2013-07881	CR-CNS-2014-06562	CR-CNS-2015-03456
CR-CNS-2013-02410	CR-CNS-2013-07882	CR-CNS-2014-06809	CR-CNS-2015-03461
CR-CNS-2013-02684	CR-CNS-2013-08059	CR-CNS-2014-06875	CR-CNS-2015-03482
CR-CNS-2013-03105	CR-CNS-2013-08291	CR-CNS-2014-06885	CR-CNS-2015-03483
CR-CNS-2013-03128	CR-CNS-2013-08526	CR-CNS-2014-06913	CR-CNS-2015-03484
CR-CNS-2013-03138	CR-CNS-2013-08527	CR-CNS-2014-07688	CR-CNS-2015-03510
CR-CNS-2013-03216	CR-CNS-2014-00062	CR-CNS-2014-07939	CR-CNS-2015-03514
CR-CNS-2013-03238	CR-CNS-2014-00117	CR-CNS-2014-07971	CR-CNS-2015-03523
CR-CNS-2013-03247	CR-CNS-2014-00122	CR-CNS-2014-08008	CR-CNS-2015-03649
CR-CNS-2013-03317	CR-CNS-2014-00205	CR-CNS-2014-08009	CR-CNS-2015-03661
CR-CNS-2013-03420	CR-CNS-2014-00383	CR-CNS-2014-08040	CR-CNS-2015-03675
CR-CNS-2013-03425	CR-CNS-2014-00401	CR-CNS-2014-08042	CR-CNS-2015-03687
CR-CNS-2013-03457	CR-CNS-2014-00464	CR-CNS-2014-08064	CR-CNS-2015-03696
CR-CNS-2013-03458	CR-CNS-2014-00588	CR-CNS-2014-08065	CR-CNS-2015-03709
CR-CNS-2013-03578	CR-CNS-2014-00626	CR-CNS-2014-08155	CR-CNS-2015-03743
CR-CNS-2013-03614	CR-CNS-2014-00776	CR-CNS-2014-08200	CR-CNS-2015-03776
CR-CNS-2013-03654	CR-CNS-2014-00776	CR-CNS-2014-08261	CR-CNS-2015-03802
CR-CNS-2013-03683	CR-CNS-2014-00789	CR-CNS-2014-08453	CR-CNS-2015-03803
CR-CNS-2013-03743	CR-CNS-2014-00858	CR-CNS-2014-08579	CR-CNS-2015-03804
CR-CNS-2013-03813	CR-CNS-2014-00859	CR-CNS-2014-08638	CR-CNS-2015-03880
CR-CNS-2013-03850	CR-CNS-2014-01109		

Work Orders

4944790	4946831	4950154	4950155	4950156	4950157
4975366	5058925	5005392	4890325	4890942	4757058
5074867	504867	5081400	5081179	5029294	5029295
4999464	5045795	508334	4744316	4757057	4763718
5005392					

Drawings

Number	Title	Revision/Date
2100-4	Isometric Drawing, 20’ Diesel Exhaust, Diesel Generator BLDG	N02
DE-H8, Sheet 1	Pipe Support DG 2 Diesel Exhaust	N01
DE-H8, Sheet 2	Pipe Support DG 2 Diesel Exhaust	N01

Miscellaneous Documents

Number	Title	Revision/Date
	Cooper Nuclear Station, Nuclear Safety Culture Assessment	June 5, 2015

Miscellaneous Documents

Number	Title	Revision/Date
	Operating Experience Program Assessment	November 22, 2013
QA Audit-15-02,	Training Supplemental	January 8, 2015 – February 19, 2015
	LO-2013-0561-003	December 17, 2013
	SOER 91-1, CONDUCT OF INFREQUENTLY PERFORMED TESTS OR EVOLUTIONS (IPTE)	December 5, 2015
	Attendance Records For SOER 91-1, Conduct of IPTE	December 9,10, 17, 2013 & January 22, 2014
TDQ#1535, SAP#13176	SOER 91-1 CONDUCT OF IPTE	00
Number 420	Supervisor / Management Training Program	23
	Active Disabled Annunciator Point Log, Unit 1, LCOTR#: ANN15-4723 RRMG B NO FLOW -01	May 23, 2015
	File Integrity Training (CNS Cyber Security)	March 11, 2015
1541	Process Applicability Determination for CR-CNS-2015-02366	0
80066-11	Drawing Change Form for ECM Number DR-2015-0002	3
	Cooper NIOS Site Status Report (Concerns and Emerging Trends)	March 31, 2015
	Cooper NIOS Site Status Report (Concerns and Emerging Trends)	April 15, 2015
	Cooper NIOS Site Status Report (Concerns and Emerging Trends)	April 30, 2015
	Cooper NIOS Site Status Report (Concerns and Emerging Trends)	May 18, 2015
TCC #5081189	Removal of FP-CV-33CV Internals for Filling of FP Storage Tanks	June 23, 2015
2.0.10	Drywell tunnel 500-800# Inspection Pre-Job Brief	0
OTH0150924	OPS RRMG HVAC DLA	00
SKL0124108 (1855)	OPS Heating, Ventilation, Air Conditioning	22
SKL0124740	Loss Of Reactor Building Ventilation Equipment	03

Miscellaneous Documents

Number	Title	Revision/Date
COR002-03-02/CT 1445	OPS Containment	29
COR002-03-01/CT 2470	OPS Containment	19
AQ Audit 14-01	Engineering	1
LO CR-CNS-2014-0130	CDBI Focused Self-Assessment Report	0
LO 2014-0010	Problem Identification & Resolution Pre-Inspection Focused Self-Assessment	0
LO 2014-003	Maintenance Training Focused Assessment	0
LO 2013-005	Maintenance Craft/Work Behaviors	0
LER 2007-02		
LER 2008-02		
LER 2010-01		
LER 2011-05		
MS-F01	Maintenance Rule Function MS-F01 Performance Criteria Basis	2
LO-HQNLO-2013-00042	Operating Experience Program Assessment	0
LO-2014-0052-003	Effectiveness Review for CR-CNS-CR-CNS-2014-00924 CA-A1-A9 (CAPRs)	0
WT-2014-0022-116		
QA Audit 13-05	Maintenance	0
QA Audit 14-02	Corrective Action Program	0
MP 800000038081	Perform AO/AOV Maintenance Plan	0
QA Audit 13-09	Emergency Plan Supplemental Audit	January 28, 2014
QA Audit 14-04	Radiological Controls Audit Report	June 26, 2014
LO 2013-0009	ALARA Planning and Controls	May 9, 2013
LO-2014-0011		
NRC IN 2002-15	Hydrogen Combustion Events in Foreign BWR Piping	April 12, 2002
NRC IN 2012-18	Failure to Properly Augment Emergency Response Organizations	October 26, 2012
NRC IN 2013-01	Emergency Action Level Thresholds Outside the Range of Radiation Monitors	February 13, 2013

Miscellaneous Documents

Number	Title	Revision/Date
NRC IN 2013-10	Programs for Monitoring Boiling-Water Reactors Steam Dryer Integrity	June 14, 2013
NRC IN 2013-13	Deficiencies with Effluent Radiation Monitoring System Instrumentation	July 12, 2013
NRC IN 2014-15	Inadequate Controls of Respiratory Accessibility, Training and Maintenance	December 1, 2014
EPDG #2, Att. I-1	Emergency Plan Desktop Guide #2, Attachment I-1, Monthly EOF Diesel Generator Run	5
EPDG #2, Att. I-2	Emergency Plan Desktop Guide #2, Attachment I-2, Annual EOF Diesel Generator Run	2
EPDG #2, Att. I-3	Emergency Plan Desktop Guide #2, Attachment I-3, EOF Diesel Generator Operation	2
EC 15-015	Disposition of Damaged RHR-MOT-27B Motor Shaft	0
	Standing Order Log	N/A
	Snapshot Benchmark, Susquehanna Emergency Diesel Generator Reliability	February 2013
QA Audit 14-03	Operations and Technical Specifications	July 16, 2014
LO-2014-0086	Rollup of other Industry Operating Experience	2014
LER 2014-002		April 11, 2014
LER 2014-005		December 10, 2014
	ASME BPVC, Section XI, Article IWE-3000, Acceptance Standards	2001 Ed./2003 Ad.
	Visual Examination Report VT-F12-034, Suppression Chamber Interior Accessible Surface Area	November 7, 2012
	Special Test Procedure 75-1, Start of DG Without the Fuel Oil Booster Pump	January 9, 1995
	EDG #1 Oil Analysis Report	August 13, 2013
	EDG #1 Oil Analysis Report	May 4, 2015

Vendor Documents

Number	Title	Revision
VM-1034	NAMCO Limit Switch and Connector Manual	12

Information Request
April 22, 2015
Biennial Problem Identification and Resolution Inspection –
June 8 – 26, 2015
Cooper Nuclear Station
Inspection Report Number 05000298/2015008

This inspection will cover the period from March 29, 2013, through the end of the inspection on June 26, 2015. All requested information should be limited to this period or to the date of the request unless otherwise specified. To the extent possible, provide the requested information electronically in Adobe PDF (preferred) or Microsoft Office format. Provide paper copies of any sensitive information during the team's first week on site; do not provide sensitive or proprietary information electronically.

Lists of documents (summary lists) should be provided in Microsoft Excel or a similar sortable format. Please ensure that the fields (especially condition report descriptions) are not size limited so that complete descriptions are provided. Please provide the information on a compact disc (one for each team member), if possible. This information may also be uploaded on the Certrec IMS website if so desired.

Please provide the following no later than May 18, 2015:

1. Document Lists

Note: For these summary lists, please include the document/reference number, the document title or description of the issue, the priority, initiation date, status, and long text descriptions of the issues.

a. Summary list of all corrective action documents related to significant conditions adverse to quality that were opened, closed, or evaluated during the period
b. Summary list of all corrective action documents related to conditions adverse to quality that were opened or closed during the period
c. Summary lists of all corrective action documents which were upgraded or downgraded in priority/significance during the period
d. Summary list of all corrective action documents that subsume or "roll up" one or more smaller issues for the period
e. Summary lists of operator workarounds, engineering review requests and/or operability evaluations, temporary modifications, and control room and safety system deficiencies opened, closed, or evaluated during the period
f. Summary list of plant safety issues raised or addressed by the Employee Concerns Program (or equivalent)
g. Summary list of all Apparent Cause Evaluations completed during the period
h. Summary list of all Root Cause Evaluations planned or in progress but not complete at the end of the period

2. Full Documents with Attachments

a. Root Cause Evaluations completed during the period
b. Quality assurance audits performed during the period
c. All audits/surveillances performed during the period of the Corrective Action Program, of individual corrective actions, and of cause evaluations

d. Corrective action activity reports, functional area self-assessments, and non-NRC third party assessments completed during the period (do not include INPO assessments)

e. Corrective action documents generated during the period for the following:
   i. All Cited and Non-Cited Violations
   ii. All Licensee Event Reports

f. Corrective action documents generated for the following, if they were determined to be applicable (for those that were evaluated but determined not to be applicable, provide a summary list):
   i. NRC Information Notices, Bulletins, and Generic Letters issued or evaluated during the period
   ii. Part 21 reports issued or evaluated during the period
   iii. Vendor safety information letters (or equivalent) issued or evaluated during the period
   iv. Other external events and/or Operating Experience evaluated for applicability during the period

g. Corrective action documents generated for the following:
   i. Emergency planning drills and tabletop exercises performed during the period
   ii. Maintenance preventable functional failures which occurred or were evaluated during the period
   iii. Adverse trends in equipment, processes, procedures, or programs which were evaluated during the period
   iv. Action items generated or addressed by plant safety review committees during the period

3. Logs and Reports

a. Corrective action performance trending/tracking information generated during the period and broken down by functional organization
b. Corrective action effectiveness review reports generated during the period
c. Current system health reports or similar information
d. Radiation protection event logs during the period
e. Security event logs and security incidents during the period (sensitive information can be provided by hard copy during first week on site)
f. Employee Concern Program (or equivalent) logs (sensitive information can be provided by hard copy during first week on site)
g. List of Training deficiencies, requests for training improvements, and simulator deficiencies for the period

4. Procedures

a. Corrective action program procedures: initiation, evaluation, classification, and disposition of conditions adverse to quality. Include operability determination procedures, root and apparent cause evaluation procedures and any other procedures that implement the corrective action program;
b. Maintenance rule program and implementing procedures;
c. Operating experience program;

d. Employee concerns program;
e. Self-assessment program;
f. Degraded/non-conforming condition process (e.g., RIS 2005-20);
g. System Health process or equivalent equipment reliability improvement programs;
h. Operational Decision Making (ODMI) process

5. Other Items

a. Scheduled date/time/location of all meetings associated with implementation of the corrective action program, such as screening meetings, corrective action review board meetings, etc.
b. A list of condition reports generated as a result of identified trends. The list should be sorted by priority and have the following information: number, title/description, date initiated, status and initiating department.
c. A list of outstanding corrective actions, sorted by priority, with the following information: number; priority; system/component affected, initiating date and due date. Please also identify and list any associated due date extensions.
d. A chronological list of all nuclear Quality Assurance/Nuclear Oversight audits and department/station self-assessments including their reference number.
e. A list of all system health reports.
f. All copy of assessments or evaluations (internal or external) regarding station or department safety-culture.
g. A list of all operability determinations and ODMIs performed with the following information: date initiated, initiating CR and status (open or closed).
h. A list of maintenance preventable functional failures (MPFFs) of risk-significant systems (include actions completed and current status). A list of current Maintenance Rule a(1) systems and a list of those systems that entered a(1) within the last two years, but which were returned to a(2) status. Include a copy of the current system health report for those systems now in a(1).
i. Copy of the latest corrective action program statistics such as the number initiated by department, human performance errors by department, backlog, corrective action timeliness and others as may be available.
j. List of industry operating experience evaluated by the site and associated condition report number if applicable. Additionally, list of all NRC generic communications (information notices, generic letters, etc.) evaluated by the site for applicability to the station regardless of the determination of applicability.
k. A chronological list of all Licensee Event Reports, with a brief description of the affected components or systems.
l. A listing of the top 10 risk-significant systems, components, and/or operator manual actions as appropriate.

6. As part of the inspection, the team will do a five-year in-depth review of issues and corrective actions related to the emergency diesel generators (EDGs). The following documents are to support this review (electronic format preferred):

a. Copies of upper and lower tier cause evaluations performed on the EDGs within the last 5 years, including root cause evaluations not already provided
b. List of all surveillances run on the EDGs within the last five years, sortable by component and including acceptance criteria

c. List of all corrective maintenance work orders performed on the EDGs within the last 5 years
d. List of maintenance rule functional failure assessments—regardless of the result—performed on the EDGs within the last 5 years
e. System training manual(s) for the EDGs
f. Engineering forms/logs containing notes from the last two engineering walk-downs of the EDGs

Please provided on CDs and/or DVDs sent via overnight carrier to:

U.S. NRC Region IV
1600 E. Lamar Blvd.
Arlington, TX 76011-4511
Attention: Richard L. Smith

Please note that the NRC is not currently able to accept electronic documents on thumb drives or other similar digital media.

If you contest the violations or significance of these NCV's, 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/

Eric Ruesch, Team Lead
Technical Support Services
Division of Reactor Safety

Docket No.: 50-298
License No.: DPR-46

Enclosure: Inspection Report 05000298/2015008
w/Attachment: Supplemental Information

cc w/encl: Electronic Distribution

Distribution
See next page

ADAMS ACCESSION NUMBER: ML15201A476

Entire Report ☒ SUNSI Review By: RLS	ADAMS ☑ Yes ☐ No	☑ Publicly Available ☐ Non-Publicly Available	☑ Non-Sensitive ☐ Sensitive	Keyword NRC-002

OFFICE	TL:RCB	PE:DRP	RI:DRP	RI:DRS	C:DRP	TL:TSS
NAME	RSmith	JMelfi	CHenderson	PJayroe	GWarnick	ERuesch
SIGNATURE	Email	Email	Email	Email	JJosey/for	/RA/
DATE	7/9/15	7/13/15	7/9/15	7/9/15	7/16/15	7/20/15

OFFICIAL RECORD COPY

Letter to Oscar A. Limpias from Eric Ruesch, dated July 20, 2015

SUBJECT: COOPER NUCLEAR STATION – NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000298/2015008

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