APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No.: 50-482/91-35 Operating License No.: NPF-42

Docket: 50-482

Licensee: Wolf Creek Nuclear Operating Corporation (WCNOC)
P.O. Box 411
Burlington, Kansas 66839

Facility Name: Wolf Creek Generating Station (WCGS)

Inspection At: WCGS, Coffey County, Burlington, Kansas

Inspection Conducted: November 17 through December 17, 1991

Inspectors: G. A. Pick, Senior Resident Inspector
L. L. Gundrum, Resident Inspector
C. J. Paulk, Reactor Inspector

Approved: A. T. Howell, Chief, Project Section D
Division of Reactor Projects

1-27-92
Date

Inspection Summary

Inspection Conducted November 17 through December 17, 1991 (Report 50-482/91-35)

Areas Inspected: Routine, unannounced inspection including plant status; followup of a previously identified NRC item; operational safety verification; surveillance observations; and monthly maintenance observations.

Results:

A violation of Technical Specification 3.1.2.2 occurred as the result of two instances of adding positive reactivity without an operable boron injection flowpath (paragraph 4.2). The occurrences were potentially significant because, in one instance, a shift supervisor failed to properly consider the requirements of the Technical Specifications (TS) because of an inadequate procedure, and a licensed operator's lack of chemical makeup system knowledge was the cause of the second instance. The second event was indicative of wekanesses in the licensed operator training program.

In addition, several other problems were caused by licensee personnel during this inspection period (paragraphs 4.1, 4.5, 4.6, and 5.3). The causes of these problems and events can be attributed to inadequate procedures, inattention to detail, miscommunications, and a lack of awareness of clearance order status. Collectively, these performance problems and those discussed above are indicative of a need for improved performance in several different areas.

The licensee ensured that a vendor reported a manufacturing defect in accordance with 10 CFR Part 21 (paragraph 4.7). The electricians conducting the motor-operated valve (MOV) maintenance activities were knowledgeable and well qualified (paragraph 6.4).

A list of acronyms and initialisms are provided as an attachment to this report.

DETAILS

1. Persons Contacted

WCNOC Personnel

B. D. Withers, President and Chief Executive Officer
J. A. Bailey, Vice President, Operations
F. T. Rhodes, Vice President, Engineering and Technical Services
G. D. Boyer, Assistant to Vice President, Operations
O. L. Maynard, Director, Plant Operations
R. S. Benedict, Manager, Quality Control (QC)
M. E. Dingler, Manager, Nuclear Plant Engineering (NPE) Systems
D. L. Fehr, Manager, Operations Training
R. D. Flannigan, Manager, Nuclear Safety Engineering
C. W. Fowler, Manager, Instrumentation and Controls
R. C. Hagan, Director, Nuclear Services
L. W. Holloway, Supervisor, Results Engineering
R. W. Holloway, Manager, Maintenance and Modifications
E. E. Lehman, Senior Engineer, Reactor Engineering
R. L. Logsdon, Manager, Chemistry
T. S. Morrill, Manager, Radiation Protection
W. T. Muilenburg, Licensing Engineer
C. E. Parry, Director, Quality
J. M. Pippin, Director, NPE
B. B. Smith, Manager, Modifications
C. M. Sprout, Section Manager, NPE, WCGS
J. D. Weeks, Manager, Operations
S. G. Wideman, Supervisor, Licensing
M. G. Williams, Manager, Plant Support

NRC Personnel

S. J. Collins, Director, Division of Reactor Safety

In addition to the above listed attendees at the exit meeting, the inspectors contacted other licensee personnel during this inspection.

2. PLANT STATUS

The plant remained in Mode 5 throughout the inspection period. Valve Operation Test and Evaluation System testing remained the critical path activity for plant restart. Concerns with the licensee's implementation of their MOV testing program and MOV operability issues are documented in NRC Inspection Report 50-482/91-34.

3. FOLLOWUP OF A PREVIOUSLY IDENTIFIED NRC ITEM (92702)

(Open) Deviation (482/9134-01): Failure to Meet Commitment to Comply With Generic Letter 89-10

During a previous inspection, five examples of a deviation from the licensee's commitment to implement the recommendations of NRC Generic Letter 89-10, "Safety-Related Motor-Operated Valve Testing and Surveillance," were cited. In response to this deviation, the licensee formed a task force to address weaknesses in the MOV testing program and MOV operability concerns.

Approximately 2 weeks after the task force was implemented, the inspector reviewed the licensee's progress to address MOV operability concerns. The inspector reviewed the licensee's progress toward evaluating spring-pack sizes, torque-switch settings, and motor sizes. At the time of the inspection, the licensee was gathering information pertaining to various MOV problems and issues. The inspector found that the licensee had appropriately expanded their scope to include information obtained from the spring pack, torque-switch settings, and motor-size reviews.

The inspector reviewed the six procedures that were developed for use by the task force. The procedures provided guidance to determine each valves' design operating parameters including maximum differential pressures. On the basis of the operating parameter determinations, the procedures then provided guidance on proper torque-switch settings and MOV actuator size. The inspector found the procedures to be of good quality.

The inspector reviewed the licensee's methodology for determining each MOV's margin for operability. The factors used in the determination of the margin were test equipment inaccuracies, torque switch repeatability, and rate of loading. It was noted that the licensee was using the square root of the sum of the squares method to determine margin. This methodology assumes that the factors are random with both positive and negative values. The licensee included rate of loading in the equation; however, rate of loading is always negative, and should not be included in the square root of the sum of the squares methodology. The licensee had selected a range for rate of loading of 5.7 to 10.5 percent on the basis of a test report for Rotork valve operators, although the MOVs at WCGS were manufactured by Limitorque. The inspector informed the licensee of these inconsistencies. The licensee acknowledged the inconsistencies and revised the affected procedures.

The licensee selected a stem-friction coefficient of 0.2 for Westinghouse gate valves. The inspector noted, however, that the licensee had not modified their equation for calculating thrust and torque requirements from the previous stem-friction coefficient value of 0.15. This error had not been identified during the licensee's review and approval process and resulted in lower valves than necessary. The inspector informed the licensee of this inconsistency and the licensee promptly revised the procedure.

The MOV operability calculations were revised using the correct rate of loading and stem-friction coefficient. On the basis of these revised calculations, two

MOV actuators appeared as though they could not provide the required torque to operate the valves under design-basis conditions. These valves, EM HV-8807A and -8807B, residual heat removal heat exchanger/chemical and volume control system to safety injection pump downstream isolations, provide the flow path for the recirculation mode of safety injection. The licensee had not made a final determination of the operability of these valves because the calculation had not been reviewed and approved.

The inspector noted that the licensee's corrective actions have been comprehensive. However, at the time of the inspection the licensee had not had adequate time to address the deviation and its examples. This deviation will remain open pending further inspection followup.

4. OPERATIONAL SAFETY VERIFICATION (71707)

The objectives of this inspection were to ensure that the facility was being operated safely and in conformance with license and regulatory requirements and that the licensee's management control systems were effectively discharging the licensee's responsibilities for continued safe operation. The methods used to perform this inspection included direct observation of activities and equipment, including control room operations, tours of the facility, interviews and discussions with licensee personnel, independent verification of safety-system status and limiting conditions for operation, corrective actions, and review of facility records.

4.1 Control Room Isolations

On November 19, 1991, the licensee received a Train B CRVIS, a containment purge isolation signal (CPIS), and a fuel building isolation signal (FBIS). The signals were initiated by a loss of power to the Train B radiation monitors. The licensee determined that the 120-volt alternating current power panel, which supplies the radiation monitors, had been deenergized.

The licensee inspected the breaker and associated circuitry and found no apparent reason for the breaker tripping. Subsequent licensee conducted interviews with maintenance personnel working on the room cooler revealed that they may have bumped the supply breaker. The licensee reset the breaker and restored the radiation monitors to service. Further licensee actions will be reviewed pending additional inspection followup of Licensee Event Report (LER) 91-23.

On December 12, a CRVIS was received when the electrical breaker that powers the Train B radiation monitors was deenergized. The breaker was deenergized to allow electrical maintenance personnel to perform troubleshooting as authorized by Work Request (WR) 07164-91. The troubleshooting was performed to verify that personnel bumping the supply breaker had initiated the actuations on November 19. All systems worked as expected. The licensee determined that the subsequent actuation occurred because a licensed operator failed to fully rotate the bypass key for the radiation monitor to the bypass position. The cause of this event appears to be inattention to detail. Further inspection followup of

licensee actions, including actions to prevent inadvertent safety-related equipment actuations during maintenance activities, will be performed following the issuance of LER 91-26.

4.2 Reactor Coolant System (RCS) Dilution Events

On November 19 and 20, 1991, with the plant in Mode 5, and both centrifugal charging pumps inoperable, two seperate events occurred which resulted in boron dilution of the RCS without the required boron injection flow path being operable. Specifically, TS 3.1.2.1 requires that with the plant in Modes 4, 5, and 6, a boron injection flowpath from either the boric acid storage system or the refueling water storage tank, via a centrifugal charging pump, to the RCS be operable. With none of the flowpaths operable, suspend all operations involving core alterations or positive reactivity changes.

On November 19, 1991, after assuming the watch, the shift supervisor reviewed the latest chemistry report for Recycle Holdup Tank (RHUT) A. The report was dated November 10. During the review, the shift supervisor determined that the actions of the previous shift supervisor to fill the RCS with borated water from RHUT A was inappropriate under existing plant conditions. The boron concentration in RHUT A was 2473 parts per million (ppm) with the RCS concentration at 2513 ppm. Adding the RHUT water to the RCS resulted in a positive reactivity addition. The addition of the RHUT water to the RCS did not pose a criticality concern because the RCS shutdown margin boron concentration was approximately 1800 ppm.

In discussions with the shift supervisor who had initiated the RHUT water addition, the inspector determined that this shift supervisor was generally aware of the applicable TS requirements for having a boron injection flow path; however, Procedure SYS BB-110, "Reactor Coolant System Fill and Vent," did not provide guidance to indicate that there could be occasions in which boron concentration of the fill water may be less than the RCS. As a result, the shift supervisor believed that it was acceptable to fill the RCS with water from RHUT A because he knew the RHUT A boron concentration was greater than the TS required minimum of 2400 ppm. The addition of borated water at a concentration less than that in the RCS, without an OPERABLE boron injection flow path through a centrifugal charging pump, is a violation of TS 3.1.2.1 (482/9135-01).

On November 20, the oncoming operations crew, which was involved with the initial RCS dilution event, noted that the previous crew had transferred the chemical makeup system controls from manual to automatic. This transfer of the controller from manual to automatic resulted in the transfer of borated water from the chemical makeup system to the RCS at a concentration of 2040 ppm. In manual, blended flow makeup water, mixed with concentrated boron, was set at 100 gallons per minute (gpm), with the boron flow at 35 gpm. When placed in automatic, blended flow increased to 120 gpm while the boron flow remained at 35 gpm. The licensee has estimated that approximately 5000 gallons of water were added to the RCS. The oncoming operator restored the chemical makeup system to manual so that it provided 2540 ppm boron in the RCS. An RCS sample showed that the RCS boron concentration was 2498 ppm. This is a second example of Violation 482/9135-01, involving a positive reactivity addition to the RCS without an operable boron injection flow path.

The licensee reviewed the circumstances associated with the operator switching from manual to automatic for blended flow while providing makeup to the RCS. The operator understood from procedural guidance that the system would inject the blended boron concentration at the selected flow rate in either the automatic or manual mode of operation. The system is designed in the automatic mode to default to the maximum flow of 120 gpm. However, the subject procedure did not identify that the automatic mode of the chemical makeup system always defaults to 120 gpm. Discussions with training department personnel indicated that the lesson plan is not explicit in discussing that the flow rate defaults to 120 gpm in the automatic mode.

The licensee's immediate corrective actions included discussions with the shift supervisors to assure proper sensitivity to boron concentration dilutions. For the second occurrence, the operations manager issued a memorandum to the operating crews describing proper operation of the chemical makeup system controller. The operation of the system will be reviewed in requalification training and a procedure change will be issued to caution the operators while using the system in the automatic mode of operation and to eliminate the implication that the flow can be adjusted while in automatic. Additionally, the licensee will consider submitting a request for a TS change to allow addition of water to the RCS from any source greater than the minimum required boron concentration.

4.3 Offsite Fire

On November 21, 1991, the control room received a report of a fire outside the protected area in the construction air compressor building. The operators promptly entered Offnormal Procedure OFN 16, Revision 7, "Fire Response." The fire brigade responded, and within 12 minutes the fire was extinguished. The local fire department was also called; however, they were not required to control the fire, and they subsequently returned to the fire station.

The licensee determined that the compressor control wiring had failed, resulting in the ignition of the insulation. The compressor serviced loads outside of the protected area, and the fire did not result in challenges to plant equipment.

4.4 Steam Generator (SG) Tube Plugging

While removing plugs from several tubes in SGs A and C, the tube plug tops separated from the tube plugs during removal. The separation occurred because of cracking in the plug metal. The plugs are at location (row/column) 28-65 for SG A and locations 14-17 and 54-40 for SG C. The tube plug top in SG A was located approximately 2 1/2 inches from the bottom of the tube and the tube plug tops in SG C were at least 6 inches from the bottom of the tubes.

The Westinghouse evaluation required that the tube plug tops be at least 5 inches from the bottom of the tubes. With the plug tops that far in, the tubes could be replugged with Inconel 690 tube plugs. The Inconel 690 tube plugs are not susceptible to the same failure mechanisms as previous tube plugs. The licensee pushed the SG A tube plug top further up inside the tube. All the affected SG tubes were replugged with the Inconnel 690 plugs. No problems were identified.

4.5 Inadvertent Spill

During the performance of Surveillance Test STS IC-623B, Revision 5, "Slave Relay Tests K-623 Train B Containment Isolation Phase A," on November 22, 1991, potentially contaminated water spilled in the mechanical penetration room. The spill was limited to the immediate area which had previously been identified as potentially contaminated. The spill resulted from a vent valve, EMV182, on the safety injection accumulator fill line, which had been left open following STS PE-017-058, Revision 8, "Local Leak Rate Test."

The licensee investigated the incident and initiated Performance Improvement Request OP 91-1043. The licensee determined that poor communications between results engineering and the operating crew was the root cause. Results engineering had requested that operations modify an existing clearance order, 91-2035 EM, on a safety injection fill line so that they could perform a local leak rate test (LLRT) of a valve within the clearance boundary. A note in the clearance order stated that the LLRT procedure restoration section would restore the valves to their proper positions. While performing the LLRT, the engineers opened the vent valve. The restoration section of the procedure was marked not applicable (NA) and the valve was not closed. The licensee's investigation determined that the engineers thought the valves were to be restored under the clearance order and, therefore, the restoration steps were marked as NA after contacting a licensed operator who was unaware of the clearance order status. The inspectors also determined that a lack of awareness of clearance order status by results engineering and a licensed operator was a contributor to this event.

The licensee initiated a procedure change to require the shift supervisor/supervising operator to initial all restoration steps which are marked NA, instead of the group supervisor. This procedure change ensures that procedure performers will notify knowledgeable personnel (shift supervisor/supervising operator) that system restoration will not be accomplished through use of a procedure.

4.6 DG Invalid Failures

On November 12, 1991, during conduct of Procedure STS KJ-0018, Revision 10, "Integrated Diesel Generator and Safeguards Actuation Test-Train B," the DG started and obtained the desired voltage and frequency within 12 seconds; however, the DG did not close to energize Emergency Bus NB02. The licensee secured the DG and entered the appropriate TS action statements.

The licensee determined that a temporary test flag, installed in the alternate supply breaker for this test, malfunctioned. The malfunction stopped the control logic from functioning to connect the DG to Emergency Bus NB02. The licensee determined that since the test flag is not normally installed in the alternate supply breaker cubicle, its failure could not affect operation of DG during emergency conditions. As a result, the test was classified as an invalid failure in accordance with Regulatory Guide 1.108. Special Report 91-005 was submitted on December 12, 1991, describing this event.

On November 21 during performance of STS IC-615A, Revision 4, "Slave Relay Test K615, Safety Injection," Slave Relay K615 failed to actuate. This relay provides a start signal to the DG A on a Train A safety injection signal. As a result, DG A failed to start. The licensee determined that the slave relay did not actuate because the solid state protection system (SSPS) was still in "bypass." In order for the slave relays to actuate, the test switch must be in "normal." The SSPS is normally in "bypass" in Modes 5 and 6 unless testing is ongoing. This test is usually performed in Modes 1-4 when the SSPS is required to be in "normal." The affected procedures were changed to reflect that in Modes 5 and 6 the SSPS must be placed in "normal" prior to performing the slave relay tests.

4.7 10 CFR Part 21 Report

In May 1990, a Model 753 Barton Pressure Transmitter failed to a constant high output. The transmitter failure was caused by shorting of the lower most strain gauge solder pin and a mounting screw. The licensee also inspected the spare transmitter in the warehouse. From the licensee's review, the licensee determined no problems with the spare transmitter. The licensee initiated additional work requests to inspect and repair as necessary the remaining Model 753 Barton Transmitters during the fifth refueling outage.

The licensee inspected the additional 13 installed Model 753 Barton Pressure transmitters during this refueling outage. The licensee identified several other transmitters with a similar configuration containing unclipped solder pins that had resulted in the initial failure. The manufacturer was contacted and stated that the solder pins should have been clipped during manufacturing to ensure adequate clearance was provided. The licensee corrected the configuration of the transmitters.

In October 1991, after receipt of the hardware failure analysis, the licensee conducted a substantial safety-hazard evaluation that determined that this problem should be reported in accordance with 10 CFR Part 21. The licensee forwarded this information to ITT Barton who notified NRC on November 21, 1991.

4.8 Chlorine Permeation Device Calibration Error

On December 11, 1991, during an engineer review of test results of the permeation device calibration conducted December 2, 1991, the engineer noted an error in the method of calibrating the devices. The devices are used to calibrate the chlorine monitors in the emergency ventilation systems. The receipt inspection plan had invoked the wrong tolerance for conducting the calibration. A review of the test results determined that one device, Serial No. 9321, was out of calibration. A new maximum permeation rate was calculated and a new graph developed. The test of the affected chlorine monitor was reperformed successfully using the new permeation rate on December 13. The calibration errors did not result in the chlorine monitors being rendered inoperable.

The licensee will correct this deficiency by altering the receipt inspection plan. The new method involves measuring the permeation rate over a longer

interval, 7 days instead of 2 days. This ensures good agreement at larger tolerance values. Upon notification of the out-of-specification chlorine monitor, operators aligned the control room ventilation system to the CRVIS mode until the test was successfully reperformed and the chlorine monitor confirmed to be operable.

Conclusions

Two events were caused by licensed operators because of an inadequate procedure and unfamiliarity with the operation of the chemical makeup system (a system that affects reactivity). This resulted in a violation of TS 3.1.2.1 when, on two occasions, positive reactivity was added to the RCS without the required boron injection flow paths being operable. The second event was indicative of weaknesses in the operator training program.

The licensee properly evaluated and reported the DG invalid failures. However, a lack of procedural guidance contributed to one of the invalid failures. Two CRIVIS actuations occurred as the result of personnel errors.

A spill of potentially contaminated fluid occurred as the result of an inadequate safety injection system restoration because of miscommunications and a lack of awareness of clearance order status by results engineering personnel and a licensed operator.

The licensee ensured that a vendor reported a manufacturing defect in accordance with 10 CFR Part 21.

5. SURVEILLANCE OBSERVATIONS (61726)

The purpose of this inspection was to ascertain whether surveillance of safety-significant systems and components was being conducted in accordance with TS. Methods used to perform this inspection included direct observation of licensee activities and review of records.

5.1 Surveillance Test of BB HV-8000A and -8000B

The inspector reviewed the test results for MOVs BB HV-8000A and -8000B, pressurizer power-operated relief valve block valves. These valves were stroke tested following maintenance performed on the motor operator. The test results were properly documented and indicated that the valves successfully met their stroke time requirement.

5.2 Relief Valve Testing

During Refuel V, 10 of the 29 inservice test relief and safety-relief valves failed "high." The licensee performed an initial review of the maintenance procedure and found it to be adequate. However, on the basis of inspector questions, the licensee discussed the failures with the vendor. These discussions with the valve manufacturer determined that a common problem with testing the liquid relief valves was the determination at what pressure the valve would actually lift. The vendor identified that the valve should be

considered to have lifted when a "pop" is detected, rather than when the first continuous stream of water is noticed. The licensee determined that their procedure did not specify how to identify when the set pressure was reached, consequently, this lack of definition resulted in documenting a higher pressure than required. Maintenance Procedure MGM MOOP-001, Revision 5, "Relief Valve Bench Testing," will be revised to provide adequate instructions for determining the lift pressure. Additionally, for Refuel VI, criteria and instructions will be developed to inspect valves which have failed setpoint testing to determine service life degradation factors. These actions resolved the inspectors previous concerns.

5.3 Filling Of SGs A and D

During the performance of STS AE-201, Revision 8, "Feedwater System Inservice Valve Test," SGs A and D were filled above the wet layup level. The purpose of the test was to demonstrate operability of the main feedwater isolation valves by performing a partial stroke (10 percent) test from the "full open" position as required by TS 4.0.5. During the performance of the test, the 10 percent exercise limit switch lights failed to extinguish. While the operators evaluated why the lights failed to extinguish, the levels in SGs A and D exceeded the wet layup level. The licensee determined that 2224 gallons of water were added to SG A and 3124 gallons were added to SG D. This overfill had no affect on the wet layup condition of the SGs.

The licensee determined that the wet layup limit was exceeded because the test procedure did not properly establish the initial conditions needed and that the feedwater regulating valves and bypass valves, which were shut during the test, are not designed to be leak tight. The inspector determined that the test was not written to be performed during Mode 5. The evaluation performed to determine the applicability of conducting the test in Mode 5 did not include a review of conditions that may exist in Mode 5. The evaluation discussed the defeating of the P-4 permissive, reactor trip and auxiliary feedwater actuation, and emulating normal SG levels by placing a resistor on three of the four channels in the protection cabinets. One channel was not changed to provide actual SG level. The evaluation did not address the circuity for the 10 percent "open" signal for the feedwater isolation valves, which only extinguish if the main steam isolation valves (MSIVs) are open. The MSIVs were closed during the performance of this test. The inspectors considered this lack of a comprehensive review to be a weakness.

After discussion with licensee personnel, the inspector determined the need to have the MSIVs open to perform this surveillance. This initial condition was not discussed in the surveillance procedure. Historically, the concern was not a problem since the MSIVs were open when the test was performed. The inability of the feedwater regulating valves to prevent excessive leakage during the test caused the overfilling. The licensee will review the procedure for enhancements before it is performed in Modes 4 or 5.

5.4 Radiation Monitor Calibration Check

On December 3, 1991, the inspector observed I&C technicians performing a calibration check on a fuel building ventilation radiation monitor. The surveillance was implemented in accordance with Procedure STS IC-453B, Revision 5, "Channel Calibration-Fuel Building Exhaust Radiation Monitor GG RE28." The calibration check was conducted every 6 months to ensure that the monitor maintains proper calibration as recommended in the vendor manual.

The I&C technicians used the current revision of the procedure. All test equipment was within calibration, as required. Discussions with the technicians indicated they were knowledgeable of the test requirements. All data met specifications.

Conclusion

Following inspector questions in the area of relief valve testing, the licensee conducted a thorough review and has initiated approriate corrective actions to determine accurate relief valve settings. The surveillance test on the feedwater isolation valve was a second example where appropriate initial conditions were not established prior to performance of the test. I&C technician performance of an instrument calibration check was good.

6. MONTHLY MAINTENANCE OBSERVATIONS (62703)

The purpose of inspection in this area was to ascertain that maintenance activities on safety-related systems and components were conducted in accordance with approved procedures and TS. Methods used in this inspection included direct observation, personnel interviews, and records review. Portions of selected maintenance activities regarding the WRs were observed. The WRs and related documents reviewed by the inspectors are listed below.

6.1 Inspection of Containment Coolers

WR 06023-91 was implemented to repair a leak on the lower left coil of the Containment Cooler A. The inspector accompanied QC personnel when they performed a leak check of the repair. No problems were noted. However, during a visual housekeeping inspection of the remaining containment coolers, the inspector found a wire brush in a drip pan beneath one of the coils. The wire brush was immediately removed. The brush had no effect on operability of the cooler.

6.2 Use of Consumables That Exceeded Shelf Life

As a result of reviewing the daily WR list, the inspector noted that consumables with an expired shelf life were used. The inspector reviewed the corrective actions associated with the licensee's determination that consumables were used on safety-related equipment when the shelf life of the consumables had expired. As a result of a performance improvement request on use of expired shelf life consumables, a licensee review of 3146 WRs indicated that 6 WRs used grease or

lubricants with expired shelf lives. Each component was evaluated for operability concerns and found to be acceptable until the next scheduled preventive maintenance. The licensee's proposed corrective action is to require the documentation of shelf life at the time of use rather than at the time of release from the warehouse. This would allow the licensee to determine the acceptability of using expired shelf life consumables just prior to use. The inspector found the licensee-proposed corrective actions acceptable.

6.3 Rust Found in Hydraulic Snubber

WR 0644-91 was implemented to change the hydraulic fluid on SG C snubbers. The hydraulic fluid for one snubber was found to contain rust. A boroscope inspection of the snubber identified significant amounts of rust on the walls and piston of the snubber. No external damage or seal damage was identified. The snubber was replaced. The other snubbers on the SG C were inspected and no problems were identified. The licensee determined that no operability problem existed. The licensee will return the failed snubber to the vendor for a root cause determination and refurbishment of the snubber. The results of the other 15 snubbers inspected by the licensee revealed some discoloration but no evidence of rust.

6.4 Valve Operator Maintenance

On December 10, 1991, the inspector observed electrical maintenance personnel set the limit switches for MOV EM HV-8807A. A QC inspector witnessed the work activities as specified in the work instructions. The inspector also observed the maintenance crew conduct a Valve Operation Test and Evaluation System sensor calibration prior to performing the static test. The craft personnel used the work instructions as required.

The inspector determined from discussion with the personnel that they were familiar with the test equipment and that they had received training. The inspector also observed a second group of electricians and a QC inspector during the termination of wires in the actuation circuitry associated with MOV EM HV-8807B. The wires were properly terminated.

Conclusions

The electricians conducting the MOV maintenance activities were knowledgeable and well qualified. The licensee performed a thorough investigation of the rust associated with a hydraulic snubber. The containment cooler repair activities were performed satisfactorily.

7. EXIT MEETING

The inspectors met with licensee personnel denoted in paragraph 1 on December 18, 1991. The inspectors summarized the scope and findings of the inspection. The licensee did not identify as proprietary any of the information provided to, or reviewed by, the inspectors.

ATTACHMENT

Acronym List

CFR	Code of Federal Regulations
CPIS	containment purge isolation signal
CRVIS	control room ventilation isolation signal
DG	diesel generator
FBIS	fuel building isolation signal
I&C	instrumentation and control
LER	licensee event report
LLRT	local leak rate test
MSIV	main steam isolation valve
MOV	motor-operated valve
NPE	nuclear plant engineering
NRC	Nuclear Regulatory Commission
ppm	parts per million
QC	quality control
RCS	reactor coolant system
RHUT	reactor holdup tank
SG	steam generator
SSPS	solid state protection system
STS	surveillance technical specification
TS	Technical Specification
WCGS	Wolf Creek Generating Station
WCNOC	Wolf Creek Nuclear Operating Corporation
WR	work request