WOLF CREEK
NUCLEAR OPERATING CORPORATION

Stephen E. Hedges
Site Vice President

March 11, 2010
WO 10-0012

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Reference: Letter dated February 11, 2010, from G. B. Miller, USNRC, to M. W. Sunseri, WCNOC

Subject: Docket No. 50-482: Reply to Notice of Violation EA-10-004 and EA-10-020

Gentlemen:

Attachment I to this letter provides Wolf Creek Nuclear Operating Corporation's (WCNOC) reply to Notices of Violation (NOV) EA-10-004 and EA-10-020 contained in the reference, concerning events discussed in Nuclear Regulatory Commission (NRC) Integrated Inspection Report 05000482/2009005.

Attachment II to this letter identifies commitments that WCNOC has made in this letter.

If you have any questions concerning this matter, please contact me at (620) 364-4190, or Mr. Richard Flannigan, Manager Regulatory Affairs at (620) 364-4117.

Sincerely,

Stephen E. Hedges

SEH/rlt

Attachment I – Reply to Notice of Violation EA-10-004 and EA-10-020
Attachment II – List of Commitments

cc: E. E. Collins (NRC), w/a
G. B. Miller (NRC, w/a
B. K. Singal (NRC), w/a
Senior Resident Inspector (NRC), w/a

IE07
NRR

Reply to Notices of Violation EA-10-004 and EA-10-020

Violation EA-10-004

NRC Integrated Inspection Report 05000482/2009005 describes the following violation:

"Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected.

Contrary to the above, from 1998 to December 31, 2009, the measures established by Wolf Creek did not correct a condition adverse to quality. Specifically, Wolf Creek did not correct leakage from the refueling water storage tank."

Reason for the Violation

The reason for the violation was the failure to properly classify Condition Reports (CR) and untimely performance of work and actions. Although the concern with deposits on the floor of the Refueling Water Storage Tank (RWST) valve house has existed for a long time, each CR written to address the concern was classified and therefore evaluated as a lower significance condition, was worked with a low priority, and did not determine the source of the boric acid crystals.

Failure to Properly Classify

When the condition of finding water in the RWST valve house was first identified it was considered to be a housekeeping concern and was addressed using the work controls program. Boric acid crystals observed were assumed to be either insulation that had been leached from the tank or, once the possibility of boron was considered, assumed to be material from a previous event (e.g., packing leak, sample collection) that either washed off equipment or wicked up from the concrete. At this time the actions in progress were all directed towards fixing what was believed to be simply a leaking RWST valve house roof that was allowing water to wash over equipment in the valve house.

When the Nuclear Regulatory Commission (NRC) Component Design Basis Inspection (CDBI) team observed the condition of the RWST valve house in June 2007, they questioned both the source of the leakage and the make-up of the deposits observed. Performance Improvement Request (PIR) 2007-2397 was written to consider the team's concerns. This PIR identified numerous repetitive attempts under the work controls program to fix the leaking RWST valve house roof (including work orders dating back to 1998). It also identified past NRC inspection issues with the conditions in the area and the current NRC CDBI team concern. The PIR description explicitly stated that the current tolerance of ineffective roof repairs is not reflective of industry excellence. Given this information, PIR 2007-2397 was classified as a non-PIR condition by the Screening Review Team (SRT) and was assigned to Maintenance Support to resolve. This category of PIR did not require a cause for the leakage to be determined.

Upon further questioning by the CDBI team in July 2007, PIR 2007-2742 was initiated. This PIR was classified as a non-significant "broke fix" type PIR. This PIR was assigned to System Engineering. In August 2007 the sample results of the boric acid crystals sent to an off site lab confirmed that the crystals were 85% boric acid by weight. This result nullified the historical

assumption that the crystals were calcium silicate insulation residue mixed with rainwater from the valve house roof leakage. This resulted in the issuance of non-cited violation 2007006-003 as it was now evident that leakage was possibly occurring from the RWST.

Untimely Performance of Work and Actions

Efforts to repair the assumed source of the water, a leaking roof, have been ongoing for many years (since 1998) in the work controls program with the results being both ineffective and untimely. Following the evaluation of PIR 2007-2397, in 2007, a local roofing company was contracted to repair the roof in accordance with plant design. This occurred in October 2008 after which there was still considerable inleakage resulting from leaks in the roof hatch and expansion joint that were not considered when the re-roofing was done. While the re-roofing was in progress, the effort to identify the source of the leakage from the RWST was being addressed by the evaluation of PIR 2007-2742. There were three actions from PIR 2007-2742. First, obtain a typical radioisotope profile of the RWST water from Chemistry; second, perform walkdowns and monitor the growth rate of boric acid crystals and analyze the crystals for the source of boron; and third, document results when the source of boric acid crystals is confirmed. Chemistry provided System Engineering with the radioisotope profile in accordance with the first action but the remaining actions were made dependent on the roof repairs stopping the leak before these actions could be completed.

In August 2009, the NRC Resident Inspector questioned the boric acid deposits on the RWST base plate. Samples were taken to evaluate the make-up of the material found and both samples were discovered to be about 80% boric acid by weight. These sample results confirmed the RWST as the source of boron as cleaning and painting within the RWST valve house ruled out past leakage events. At this time, the NRC Resident Inspector identified that this was a failure to correct a previously existing condition and considered the condition to be a cited violation. This concern resulted in initiation of CR 22866 which was classified as an Apparent Cause Evaluation.

From this summary, the reason for the violation was the failure to properly classify CRs due to considering the presence of boric acid crystals an insignificant concern. Initially, the water and any material found were considered to be a housekeeping concern, left to the work controls program to correct. Once boric acid crystals were identified the issue was still considered insignificant. Correction of the condition was left dependent on other low priority work. Also, because the existence of boric acid crystals was accepted, these work activities were not accomplished in an expeditious manner.

<u>Corrective Steps That Have Been Taken and Results Achieved</u>

Anchor bolts inside the RWST valve house exposed to the boric acid leakage were inspected by Quality Control under subwork order (SWO) 10-323781-002. Inspection results found no wastage of bolting. One bolt was inspected below the grout line with no wastage observed below the grout line. The boric acid corrosion program engineer supplemented the evaluation of this bolting with this additional information. This provided additional support of the original evaluation that concluded no structural concerns exist with the RWST.

The corrective action program has changed significantly since this issue occurred in 2007. As a result of weaknesses identified in the corrective action program, the corrective action process

including the screening of condition reports, was modified in April 2009. Specifically, a screening review team conducts the screening of condition reports and subsequently the senior leadership team reviews these assignments to confirm the priority and acceptability of these screenings. As a result of these changes, improvements in the quality of condition reports and timeliness has improved as evidenced in the corrective action program indicators.

Corrective Steps That Will Be Taken to Avoid Further Violations

1. An engineering evaluation will be issued to document the repair plans and the continued acceptability of the minor RWST leakage until the source of the leak is found and corrected. This action is planned to complete by May 27, 2010.

2. Identify and effect repairs of the source of the RWST leak to prevent further leakage. This action will be complete prior to startup from Refueling Outage 18 (Spring 2011).

Date When Full Compliance Will Be Achieved

Full compliance will be achieved prior to startup from Refueling Outage 18.

References

NRC Letter, " Wolf Creek Generating Station – NRC Component Design Basis Inspection Report 05000482/2007006," dated October 15, 2007
PIR 2007-2397, Roof Leak on the RWST Valve House
PIR 2007-2742, RWST Base Plate White Residue is Boric Acid Base
CR 00022866, NRC Identified NCV [Failure to take Adequate Corrective Action]

Violation EA-10-020

Inspection Report 05000482/2009005 describes the following violation:

"Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part that the design basis is correctly translated into specifications, drawings, and procedures. The design basis of the reactor vessel head vent is to allow noncondensable gases to escape to the pressurizer during shutdown condition.

Contrary to the above, from December 2, 2003, to December 31, 2009, Wolf Creek failed to ensure the design basis for the reactor vessel head vent was correctly translated into specifications, drawings and procedures. Specifically, Wolf Creek designed and installed a reactor vessel head permanent vent piping modification which failed to vent noncondensable gases to the pressurizer during shutdown operations.

This resulted in the formation of voids in the reactor vessel head while the plant was shutdown and depressurized in successive refueling outages."

Reason for the Violation

Wolf Creek Nuclear Operating Corporation (WCNOC) failed to ensure timely correction of a reactor head vent system condition. In addition, no evaluation or justification for deferring resolution of this condition to Refueling Outage 18 was performed.

A root cause evaluation identified two significant causes. The primary cause is inadequate procedures that implement the corrective action program. Corrective action procedures did not provide adequate guidance regarding 10 CFR 50, Appendix B, Criterion III, "Design Control," and Criterion XVI, "Corrective Action," and Regulatory Issue Summary (RIS) 2005-020 inspection guidance to ensure the reactor head vent nonconformance was corrected prior to restart after a planned refueling outage (i.e., first available opportunity) or provide guidance for including risk justification for delaying corrective actions to Refueling Outage 17 and beyond. In addition, it was also determined that the work controls program procedures do not provide adequate guidance to justify the delay of corrective actions associated with deficiencies.

The second cause focuses on management oversight. During Refueling Outage 16, management oversight did not apply appropriate priority for this condition or ensure the reactor head vent system was inspected at the first available opportunity. Additionally, management (Operations and Corrective Action Group) did not put a high priority on the completion of the CR 09112 root cause evaluation at the time of the condition. Due to Refueling Outage 16 assignments and higher priority plant events, resources were not available to perform a timely evaluation.

Putting this cause into perspective, due to the unavailability of plant resources during Refueling Outage 16, a root cause evaluation team to determine the cause of the original violation (CR 9112) was not immediately formed with full-time participation. Because the team was not formed, the final evaluation was not completed within 30 days as required by AP 28A-100, "Condition Reports." The evaluation was actually completed 121 days after CR initiation. Therefore, by the time the corrective actions for CR 9112 were developed, Refueling Outage 16 activities were complete. The actions included an inspection of the reactor head vent piping to

be completed in Refueling Outage 17 with a design modification planned for Refueling Outage 18. The corrective actions were considered timely when they were created, but a justification was not provided to explain the extended time frame.

Therefore, Management did not ensure the reactor head vent piping was inspected at the first opportunity, which was during Refueling Outage 16.

Corrective Steps That Have Been Taken and Results Achieved

Prior to Refueling Outage 17 the following corrective actions were completed:

- the vent manifold used during Reactor Coolant System (RCS) draindown was modified,
- the RCS draindown procedure was revised to check the configuration of all tygon tubing sections and provide operators with guidance to minimize nitrogen coming out of solution, and
- adjusted the sequence for removing and restoring Reactor Vessel Water Level Indicating System (RVLIS) indication to ensure it was in service during the draining evolution during Refueling Outage 17.

The result was a well controlled RCS draindown evolution during Refueling Outage 17 which included operators monitoring reactor vessel water level, pressurizer level and tygon tube indication.

Work control program procedures for daily maintenance activities and refueling outage scope identification have been revised to include guidance for justification to be documented when a deficiency must be rescheduled or cannot be corrected at the next available opportunity. This justification requires documentation that demonstrates that a reasonable assurance of safety is maintained prior to rescheduling safety significant work activities.

Corrective Steps That Will Be Taken to Avoid Further Violations

Corrective action procedures will be revised to require deficiencies to be corrected at the next available opportunity or to provide justification when it is determined the corrective action will be delayed. This action is planned to complete by April 29, 2010.

In order to ensure there are no other similar component issues, a multi discipline team was formed to review; open work orders on Systems, Structures, or Components (SSCs) with deficient conditions, long term CR actions, CRs with one or more extensions that are due in the next year (excluding Improvement and Learning Evaluations (ILE)), clearance orders greater than 90 days old, and equipment out-of-service log items. The actions identified by the team are being tracked in the corrective action program. This action is planned to complete by June 30, 2010.

Engineering has a corrective action assigned to develop a modification to address correcting the reactor head vent pipe venting deficiency. The reactor vessel venting issue will be resolved prior to the startup from Refueling Outage 18 (Spring 2011). It must be noted however, that the condition that resulted in the initial NCV and also caused the concerns that lead to EA-10-020 will likely occur again before corrective actions are complete. This potential reoccurrence is due to the required RCS draindown at the beginning of the refueling outage.

Date When Full Compliance Will Be Achieved

Full compliance will be achieved prior to startup from Refueling Outage 18 (Spring 2011).

References

CR 22501, Potential Cited Violation for Reactor Head Vent Issue
CR 09112, Reactor Coolant System Experienced an Unexplained Loss of Level
AP 22C-002, Work Controls,
AI 22D-003, Outage Scope Identification, Control and Risk Determination
AI 28A-003, Rapid Response to Events of Significance
AIF 28A-003-02, Event Focus Meeting Checklist
AP 28A-100, Condition Reports
AI 28A-001, Level 1 CR Evaluations (Incident Investigation Team)
AIF 28A-001-05, RCE Standard
AIF 28A-001-07, Management Support Scorecard
AI 28A-006, Level 3 CR Evaluation
AI 28A-007, Level 2 CR Evaluation
AIF 28A-007-05, RCE Standard
AIF 28A-007-07, Management Support Scorecard
AI 28A-008, Level 4 CR Evaluation

LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by WCNOC in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Mr. Richard Flannigan at (620) 364-4117.

REGULATORY COMMITMENTS

Regulatory Commitment	Due
An engineering evaluation will be issued to document the repair plans and the continued acceptability of the minor RWST leakage until the source of the leak is found and corrected.	5/27/2010
Identify and effect repairs of the source of the RWST leak to prevent further leakage.	Prior to Startup from Refueling Outage 18
Corrective action procedures will be revised to require deficiencies to be corrected at the next available opportunity or to provide justification when it is determined the corrective action will be delayed.	4/29/2010
In order to ensure there are no other similar component issues, a multi discipline team was formed to review; open work orders on Systems, Structures, or Components (SSCs) with deficient conditions, long term CR actions, CRs with one or more extensions that are due in the next year (excluding Improvement and Learning Evaluations (ILE)), clearance orders greater than 90 days old, and equipment out-of-service log items.	6/30/2010
Engineering has a corrective action assigned to develop a modification to address correcting the reactor head vent pipe venting deficiency. The reactor vessel venting issue will be resolved prior to the startup from Refueling Outage 18 (Spring 2011).	Prior to Startup from Refueling Outage 18