WOLF CREEK
NUCLEAR OPERATING CORPORATION

Stephen E. Hedges
Vice President Operations and Plant Manager

June 29, 2005

WO 05-0021

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

Subject: Docket No. 50-482: Licensee Event Report 2005-003-00

Gentlemen:

The enclosed Licensee Event Report (LER) 2005-003-00 is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) regarding a failure to maintain closure of containment penetrations during fuel movement.

Commitments made by Wolf Creek Nuclear Operating Corporation in the enclosed LER are identified in the Attachment to this letter.

If you have any questions concerning this matter, please contact me at (620) 364-4190, or Mr. Kevin Moles at (620) 364-4126.

Very truly yours,

Stephen E. Hedges

SEH/rlg

Enclosure

cc: J. N. Donohew (NRC), w/a, w/e
W. B. Jones (NRC), w/a, w/e
B. S. Mallett (NRC), w/a, w/e
Senior Resident Inspector (NRC), w/a, w/e

IE22

LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek Nuclear Operating Corporation (WCNOC) in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Kevin Moles, Manager Regulatory Affairs at Wolf Creek Generating Station, (620) 364-4126.

COMMITMENT	Due Date/Event
Steps will be added to procedure CKL PE-352 to install and remove a blind flange to the exterior auxiliary access hatch equalizing valve.	August 16, 2005
The exterior auxiliary access hatch equalizing valve will be added to procedure STS GP-006 as a containment penetration.	August 16, 2005
STS GP-006 will be revised to have operations provide a dedicated computer and work station for the Containment Closure Trackers that will integrate the individuals performing this task into the Work Control Center during Refueling outages.	September 13, 2005

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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4. TITLE

Failure to Maintain Closure of Containment Penetrations During Fuel Movement

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
04	30	2005	2005	- 003 -	00	06	29	2005	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE: 6

10. POWER LEVEL: 0

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☑ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Kevin J. Moles, Manager Regulatory Affairs	(620) 364-4126

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On April 30, 2005 with the plant in Mode 6, Refueling, Wolf Creek Nuclear Operating Corporation (WCNOC) personnel discovered two instances where containment closure, per Technical Specification 3.9.4 was not met.

In the first instance, an air-to-air pathway existed through the exterior equalizing valve of the auxiliary access hatch. A temporary closure device was installed on the auxiliary access hatch. The evaluation conducted for the temporary closure device was not sufficient to ensure complete closure of the air-to-air pathway through the equalizing valve. Fuel movement was stopped and the equalizing valve was placed under administrative controls.

In the second instance, the 'B' Steam Generator had an air-to-air pathway through the containment wall to the auxiliary building. The 'B' Steam Generator manways were removed, opening the interior of the steam generator to the containment. The auxiliary building was open to the interior of the 'B' steam line through valves ABV0071 and ABV0070 which were uncapped and open under a clearance order. Upon discovery, the penetration was immediately placed under administrative control.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

PLANT CONDITIONS PRIOR TO EVENT
MODE – 6
Power – 0
Refueling operations in progress

EVENT DESCRIPTION:

Auxiliary Access Hatch Pathway

During refueling outage 14, as allowed by Technial Specification (T/S) 3.9.4, a temporary closure device was in place on the auxiliary access hatch. On April 30, 2005 at 1530, an operator heard air blowing from containment through the exterior equalizing valve while walking by the auxiliary access hatch. An air flow path from containment through the auxiliary access hatch equalizing valve to the outside atmosphere was confirmed to exist and fuel movement was suspended. Administrative controls were placed on the equalizing valve and fuel movement was restarted.

In July of 1994, Amendment Number 74 to the Wolf Creek Generating Station (WCGS) T/S was issued by the NRC to allow the use of a temporary closure device on the auxiliary access hatch. The closure device is a steel plate that is bolted into the door opening. This plate has engineered, sealable penetrations to allow for cables to run through, and hose fittings on each side of the plate to allow for hose connections to be made.

Prior to installing the closure device, the doors of the auxiliary access hatch are opened. During the opening sequence of the doors, an equalizing valve opens to minimize the differential pressure across the doors. The evaluations and procedure reviews conducted for the closure device did not recognize that the equalizing valve remained open.

Steam Generator Pathway

On April 27, 2005 at 1247, prior to commencing fuel movement to enter Mode 6, procedure STS GP-006, Containment Closure Verification, was performed.

To ensure that procedure STS GP-006 remains current the Containment Closure Trackers continually check clearance orders, check work being performed by all work groups, and check the various procedures to avoid having conflicts that would allow direct air-to-air pathways without appropriate controls in place.

On April 28, 2005 at 2346 hours clearance order (CO) R14 AB-B-0001D was placed by a Nuclear Station Operator. The clearance order tagged valve ABV0070 open and valve ABV0071 open/uncapped. These valves are in series on the 'B' Main Steam line drain. The clearance order identified that the tag for valve ABV0070 affected containment closure.

On April 29, 2005 at 0037 hrs, Wolf Creek entered Mode 6 from defueled.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

On April 30, 2005 at 1259 hours during a review of clearance orders, the Day Shift Containment Tracker notified the Control Room that penetration # 3, which contains valve ABV0070, had an air-to-air pathway. The 'B' Steam Generator manways had previously been removed which created a pathway to the containment atmosphere. Upon finding the penetration unisolated, immediate corrective action was put in place to have this penetration placed under administrative controls per STS GP-006.

BASIS FOR REPORTABILITY:

The air-to-air pathways via the equalizing valve of the auxiliary access hatch and the open steam generator to the auxiliary building without administrative controls is contrary to T/S 3.9.4 which states, in part, 'An emergency personnel escape air lock temporary closure device is an acceptable replacement for an emergency air lock door' and 'Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.' The events are reportable pursuant to 10 CFR 50.73(a)(2)(i)(B) for any operation or condition which was prohibited by the plant's T/S.

ROOT CAUSE:

Auxiliary Access Hatch Pathway

The Safety Evaluation and No Significant Hazards Consideration Determination for T/S Amendment 74 failed to adequately assess the configuration change when using the closure device. The narrow focus of the evaluation also failed to identify the functionality of the door in relation to the equalizing valve. Multiple opportunities existed to identify the air-to-air flow path during the T/S Amendment, the procedure changes, and the Engineering Disposition. However, the rigor of the various reviews and evaluations was not sufficient to identify the air-to-air flowpath through the equalizing valve.

Steam Generator Pathway

The Shift Engineer, the Nuclear Station Operator, and the Containment Closure Tracker failed to close the communication loop with one another on the hanging of CO R14 AB-B-0001D and the documentation of the administrative controls in procedure STS GP-006. Not having the Containment Trackers as an integral part of the Work Controls Center during the Refueling Outages contributed to the miscommunication that occured.

CORRECTIVE ACTIONS:

Auxiliary Access Hatch Pathway

Steps will be added to procedure CKL PE-352 to install and remove a blind flange to the exterior auxiliary access hatch equalizing valve. The exterior auxiliary access hatch equalizing valve will be added to procedure STS GP-006 as a containment penetration.

These changes will be completed by August 16, 2005.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

Steam Generator Pathway

STS GP-006 will be revised to have operations provide a dedicated computer and work station for the Containment Closure Trackers that will integrate the individuals performing this task into the Work Control Center during Refueling outages. This change will be completed by September 13, 2005.

Lessons learned from this event have been incorporated into Operating Experience for Licensed Operator Requalification training.

SAFETY SIGNIFICANCE:

During movement of irradiated fuel assemblies within Containment, the most severe radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel. Fuel handling accidents include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. In Mode 6, the potential for Containment pressurization as a result of a fuel handling accident is minimal.

Therefore, it is highly unlikely that there will be any significant release of radioactive material through the leakage path as described above. If a release were to take place through this path, the quantity of radioactive materials released to the outside environment would be insignificant. Even though the rate of leakage can not be determined, based on engineering judgment, the consequences of this release will be bounded by the fuel handling accident analysis performed for Amendment 95 to the WCGS T/S. The analysis assumes that the gaseous effluents escaping from the damaged fuel rods are released directly to the environment within 2 hours through the open personnel airlock doors. The effluents do not mix with the surrounding air of the adjacent Auxiliary Building, and no credit is taken for any iodine removal by the atmosphere filtration system filters. The analysis results demonstrate that the potential dose consequences from a fuel handling accident with the personnel airlock doors remaining open will be well within the 10 CFR 100 limits.

OPERATING EXPERIENCE/PREVIOUS EVENTS:

LER 1999-004-00 reported a failure to maintain closure of containment penetrations during fuel movement. A direct flow path had been created between the Containment Building atmosphere and the Auxiliary Building during fuel movement. This event was caused by a series of personnel errors in the implementation of the work control process.

LER 1996-005-00 reported opening of a containment isolation valve to allow draining of the B and C steam generators while core reload was underway. A dedicated non-licensed individual with the sole responsibility to close the valve upon direction from the Control Room was sufficient administrative controls. However, this was thought to be contrary to the T/S. LER 1996-005-00 was later retracted due to an evaluation that determined that a loop seal was adequate and Containment closure maintained.

LER 1996-003-00 reported a failure to maintain Containment closure due to four of eight bolts being loose on a blind flange installed on the Steam Generator "D" Main Steam Safety Valve. The corrective actions for this LER were directed toward instructions for installing blind flanges and would not have prevented this event.