



Nebraska Public Power District

'Always there when you need us'

NLS2007049

June 13, 2007

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Licensee Event Report No. 2007-003-00
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Dear Sir or Madam:

The purpose of this correspondence is to forward Licensee Event Report 2007-003-00.

Sincerely,

Michael J. Colomb
General Manager of Plant Operations

/jf

Enclosure

| | |
|--|---------------------------------|
| cc: Regional Administrator w/enclosure USNRC - Region IV | NPG Distribution w/enclosure |
| Cooper Project Manager w/enclosure USNRC - NRR Project Directorate IV-1 | INPO Records Center w/enclosure |
| Senior Resident Inspector w/enclosure USNRC - CNS | SORC Administrator w/enclosure |
| SRAB Administrator w/enclosure | CNS Records w/enclosure |

JE22

USNRC/NRR

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward 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 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.

| | | |
|---|-------------------------------------|--------------------------|
| 1. FACILITY NAME Cooper Nuclear Station | 2. DOCKET NUMBER 05000298 | 3. PAGE 1 of 5 |
|---|-------------------------------------|--------------------------|

4. TITLE
Incorrectly Installed Fuse Block Resulted in a Condition Prohibited by Technical Specifications

| 5. EVENT DATE | | | 6. LER NUMBER | | | 7. REPORT DATE | | | 8. OTHER FACILITIES INVOLVED | |
|---------------|-----|------|---------------|-------------------|-----------------|----------------|-----|------|------------------------------|---------------|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAME | DOCKET NUMBER |
| 04 | 23 | 2007 | 2007 | - 003 | - 00 | 06 | 13 | 2007 | FACILITY NAME | DOCKET NUMBER |
| | | | | | | | | | | 05000 |
| | | | | | | | | | | 05000 |

| | | | | | | | | | | |
|--|--|---|--|---|--|--|--|--|--|--|
| 9. OPERATING MODE 1 | 11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) | | | | | | | | | |
| 10. POWER LEVEL 100 | <input type="checkbox"/> 20.2201(b) | <input type="checkbox"/> 20.2203(a)(3)(i) | <input type="checkbox"/> 50.73(a)(2)(i)(C) | <input type="checkbox"/> 50.73(a)(2)(vii) | | | | | | |
| | <input type="checkbox"/> 20.2201(d) | <input type="checkbox"/> 20.2203(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) | | | | | | |
| | <input type="checkbox"/> 20.2203(a)(1) | <input type="checkbox"/> 20.2203(a)(4) | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) | | | | | | |
| | <input type="checkbox"/> 20.2203(a)(2)(i) | <input type="checkbox"/> 50.36(c)(1)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix)(A) | | | | | | |
| | <input type="checkbox"/> 20.2203(a)(2)(ii) | <input type="checkbox"/> 50.36(c)(1)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x) | | | | | | |
| | <input type="checkbox"/> 20.2203(a)(2)(iii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(v)(A) | <input type="checkbox"/> 73.71(a)(4) | | | | | | |
| <input type="checkbox"/> 20.2203(a)(2)(iv) | <input type="checkbox"/> 50.46(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(v)(B) | <input type="checkbox"/> 73.71(a)(5) | | | | | | | |
| <input type="checkbox"/> 20.2203(a)(2)(v) | <input type="checkbox"/> 50.73(a)(2)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(v)(C) | <input type="checkbox"/> OTHER | | | | | | | |
| <input type="checkbox"/> 20.2203(a)(2)(vi) | <input checked="" type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(v)(D) | <small>Specify in Abstract below or in NRC Form 366A</small> | | | | | | | |

12. LICENSEE CONTACT FOR THIS LER

| | |
|---|--|
| FACILITY NAME Paul V. Fleming, Licensing Manager | TELEPHONE NUMBER (Include Area Code) (402) 825-2774 |
|---|--|

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO EPIX |
|-------|--------|-----------|--------------|--------------------|-------|--------|-----------|--------------|--------------------|
| E | EB | FUB | G082 | N | | | | | |

| | | | | |
|---|-------------------------------------|-------|-----|------|
| 14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE). <input checked="" type="checkbox"/> NO | 15. EXPECTED SUBMISSION DATE | MONTH | DAY | YEAR |
|---|-------------------------------------|-------|-----|------|

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

On April 23, 2007, during a step in the 4160 volt bus 1G undervoltage relay and relay timer functional test procedure, an operator placed his finger on the exterior of a fuse block casing, at which time, the fuse block dropped onto the bottom of the breaker cubicle. Because a contact had been temporarily sleeved, no trip actions occurred, annunciators alarmed as expected and the bus remained energized. The fuse block was securely replaced and the condition was corrected prior to surveillance completion.

The incorrectly installed fuse block condition had existed for 35 days, traceable to the last surveillance completion. This condition violated technical specification (TS) 3.8.1, AC Sources-Operating, Condition A, One Offsite Circuit Inoperable, for 7 days. Consequently, this condition violated CNS TS 3.8.1, AC Sources-Operating, Condition F, Required Action and Associated Completion Time of Condition A, B, C, D, or E, to be in Mode 3 within 12 hours and Mode 4 within 36 hours. The cause of this event is that no expectation or training existed for verifying tightness following installation. Other corrective actions are to revise procedures and train operators on proper fuse holder installation.

LICENSEE EVENT REPORT (LER)

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|------------------------|-----------|---------------|-------------------|----------|---------|
| Cooper Nuclear Station | 05000298 | YEAR | SEQUENTIAL NUMBER | REVISION | 2 of 5 |
| | | 2007 | -- 003 | 00 | |

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

PLANT STATUS

Cooper Nuclear Station (CNS) was in Mode 1 at 100% steady state power at the time of the identified condition.

BACKGROUND

The Auxiliary Power Distribution System (EIS:EB) consists of seven 4160 volt alternating current (AC) buses (EIS:BU) divided into critical service and normal service buses. Normal service buses, 1A and 1B, provide power to the two critical service buses, 1F and 1G, respectively. Buses 1F and 1G can also be supplied from the emergency AC power source (EIS:FK) or the standby AC power source (EIS:EK). Buses 1F and 1G supply power to critical 4160 volt AC and 480 volt AC loads required during abnormal operational transients and accidents.

To preclude damage to motors on critical equipment due to undervoltage conditions, the 4160 volt AC critical buses are provided with two levels of protection. The first level provides degraded voltage protection and the second level is for loss of voltage.

CNS Technical Specifications (TS) Limiting Condition for Operation 3.3.8.1, Loss of Power (LOP) Instrumentation, requires that the LOP instrumentation for each Function in Table 3.3.8.1-1 shall be operable in Modes 1, 2, and 3. CNS TS Surveillance Requirement 3.3.8.1.1, Perform CHANNEL FUNCTIONAL TEST, is required to be performed every 31 days to check the functionality of the relays providing the 4160 volt AC critical bus undervoltage protection.

EVENT DESCRIPTION

On April 23, 2007 the plant was in Mode 1 at 100% steady state power. Operators on the dayshift were performing the 4160 volt bus 1G (division 2) undervoltage relay (EIS:27) and relay timer (EIS:TMR) functional test. During execution of a step in the surveillance procedure, an operator identified the correct fuse block (EIS:FUB) to a verifier by placing his finger on the black plastic exterior of the fuse block casing. Before the concurrent verifier could agree that this was the correct fuse block casing, the fuse block fell onto the bottom surface of the breaker's upper cubicle.

LICENSEE EVENT REPORT (LER)

| | | | | | |
|------------------------|-----------|---------------|-------------------|----------|---------|
| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
| Cooper Nuclear Station | 05000298 | YEAR | SEQUENTIAL NUMBER | REVISION | 3 of 5 |
| | | 2007 | -- 003 | 00 | |

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

During the time from March 19, 2007, the previous surveillance performance date, until April 23, 2007, the fuse block performed as expected with the plant at full power under normal operating conditions. The 4160 volt bus 1G did not experience a loss of safety function while the incorrectly installed (loose) fuse block condition existed. At no time did the condition cause an open circuit. Breakers (EIS:BKR) and switches around the fuse block routinely opened and closed, traffic in the area was normal, and the fuse block's cubicle was subject to the normal vibrations and impulses of a plant operating at full power for 35 days.

Had the condition caused an open circuit, the problem would have been immediately apparent. Breaker 1GB would have tripped open and bus 1G would have de-energized. This would have caused the 4160 volt breakers for the running pumps to trip, diesel generator 2 to start but not load, and breaker 1GS to close to connect the 1G bus to the emergency station transformer.

Because a contact had already been temporarily sleeved, when the fuse holder fell no trip actions occurred, annunciators (EIS:ANN) alarmed as expected and the 1G bus remained energized. The degraded condition was corrected when the fuse block was securely replaced prior to completion of the surveillance.

Since there was insufficient evidence that the fuse holder would have remained in place during normal, transient, or accident plant demands this event has been classified as reportable. During the 35 day period traceable to the last surveillance completion, this condition violated CNS TS 3.8.1, AC Sources-Operating, Condition A, One Offsite Circuit Inoperable, for 7 days. Consequently, this condition violated CNS TS 3.8.1, AC Sources-Operating, Condition F, Required Action and Associated Completion Time of Condition A, B, C, D, or E, to be in Mode 3 within 12 hours and Mode 4 within 36 hours.

BASIS FOR REPORT

This event is being reported as a condition prohibited by plant TS per 10 CFR 50.73(a)(2)(i)(B).

SAFETY SIGNIFICANCE

Analysis of this event found a negligible increase in nuclear risk. The fuse holder remained in place during normal operation of the plant and did not challenge plant operation or mitigating system availability. Therefore, it is expected that the fuse block's electrical continuity would have been maintained had plant events or initiators (except a sufficiently significant seismic event) occurred prior to the fuse block's restoration on April 23, 2007.

LICENSEE EVENT REPORT (LER)

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|------------------------|-----------|---------------|-------------------|----------|---------|
| Cooper Nuclear Station | 05000298 | YEAR | SEQUENTIAL NUMBER | REVISION | 4 of 5 |
| | | 2007 | -- 003 | 00 | |

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

The test configuration provided by the surveillance procedure ensured that plant operation remained unaffected when the fuse block fell from its mounting. Risk exposure was minimal since the fuse block was restored in a matter of minutes. Consideration of the short exposure time and the avoidance of an impact to plant operation via the test configuration results in the conclusion that there was minimal impact to plant systems and a negligible increase in core damage probability.

Because the fuse block remained in place and functional, no external event mitigating functions were lost and corresponding risk was not impacted.

A sufficiently significant seismic event could have caused the fuse block to fall from its mounting. If this had occurred, the ability to provide AC power from the emergency station service transformer and diesel generator 2 was unaffected. The CNS individual plant examination of external events solely credited the diesel generator as the 4160 volt AC source for bus 1G in the evaluation of seismic risk. Because the emergency station service transformer and diesel generator 2 remained as fully qualified sources of power, the loss of the fuse block during a seismic event would have a negligible increase in risk to core damage.

CAUSE

The cause of this event is that there has been no explicit expectation at CNS that a fuse holder would be tugged by the installer or the concurrent verifier after re-insertion into the fuse base to ensure that the fuse holder had been securely reinstalled. A contributing cause is that operators have not received hands-on training with respect to fuse holder pulling, re-insertion, and verification that the fuse holder has been securely replaced.

In general, the practice at CNS with respect to the surveillance procedure has been for the verifier to visually check that the fuse holder has been replaced, but not to physically verify that the fuse holder has been firmly re-inserted by feeling the edge between the fuse holder and base, by tugging on the bail handle or by pushing on the fuse holder.

CORRECTIVE ACTION

Immediate corrective actions included:

1. The fuse holder was correctly reinstalled and the surveillance procedure was completed.

LICENSEE EVENT REPORT (LER)

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|------------------------|-----------|---------------|-------------------|----------|---------|
| Cooper Nuclear Station | 05000298 | YEAR | SEQUENTIAL NUMBER | REVISION | 5 of 5 |
| | | 2007 | -- 003 | 00 | |

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

2. A night order was issued to the operating crews discussing the event and the requirements of verifying proper installation of fuse blocks in the 4160 volt AC breakers. As noted in the night order, "...when any fuse block is reinstalled in a 4160 volt breaker enclosure the individuals involved will ensure the fuse block is properly installed by pulling on the fuse block handle to test for resistance to removal."
3. A work order was generated to examine the fuse block and check for possible abnormalities with nothing of significance noted.

Long term corrective actions being tracked in the CNS corrective action program include:

1. Preparing and implementing a training module to operators about how to pull and replace fuse holders from the fuse base, and how to verify that the fuse holder has been properly reseated.
2. Modify appropriate procedures to contain a note incorporating the precaution for verifying proper installation of the fuse block as stated in the night order implemented as an immediate action.

PREVIOUS EVENTS

There have been no reportable events identified in the past ten years related to fuse block failures.

Correspondence Number: NLS2007049

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

| COMMITMENT | COMMITMENT NUMBER | COMMITTED DATE OR OUTAGE |
|------------|-------------------|--------------------------|
| None | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |