**Entergy Operations, Inc.**
1448 S.R. 333
Russellville, AR 72802
Tel 479-858-4710

**David B. Bice**
Acting Manager, Licensing
Arkansas Nuclear One

1CAN120904

December 17, 2009

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Licensee Event Report 50-313/2009-003-01
Arkansas Nuclear One – Unit 1
Docket No. 50-313
License No. DPR-51

Dear Sir or Madam:

In accordance with 50.73(a)(2)(ii)(B), enclosed is the subject report concerning an unanalyzed condition. The purpose of this supplement is to include the additional reporting criteria of a condition that could have prevented the fulfillment of a safety function per 10 CFR 50.73(a)(2)(v)(B).

There are no commitments contained in this submittal.

Sincerely,

DBB/slp

Enclosure – LER 50-313/2009-003-01

cc: Mr. Elmo Collins
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
612 E. Lamar Blvd., Suite 400
Arlington, TX 76011-4125

NRC Senior Resident Inspector
Arkansas Nuclear One
P.O. Box 310
London, AR 72847

Institute of Nuclear Power Operations
700 Galleria Parkway
Atlanta, GA 30339-5957
LEREvents@inpo.org

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

# LICENSEE EVENT REPORT (LER)

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

APPROVED BY OMB NO. 3150-0104 EXPIRES 8/31/2010

Estimated burden per response to comply with this mandatory information collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@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 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 | 2. DOCKET NUMBER | 3. PAGE |
|---|---|---|
| Arkansas Nuclear One, Unit 1 | 05000313 | 1 OF 3 |

4. TITLE Unanalyzed Condition That Significantly Degraded Plant Safety Existed Intermittently Due to an Unlatched Door Serving as a High Energy Line Break Barrier

| 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 |
| 09 | 22 | 2009 | 2009 | - 003 - | 01 | 12 | 17 | 2009 | FACILITY NAME | DOCKET NUMBER |

9. OPERATING MODE: 1

10. POWER LEVEL: 100

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- Specify in Abstract below or in NRC Form 366A |
| ☐ 20.2203(a)(2)(vi) | ☐ 50.73(a)(2)(i)(B) | ☐ 50.73(a)(2)(v)(D) | |

12. LICENSEE CONTACT FOR THIS LER

| NAME | TELEPHONE NUMBER (Include Area Code) |
|---|---|
| David B. Bice, Acting Manager, Licensing | 479-858-4710 |

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

| 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 September 22, 2009, at approximately 1329 CDT, with the plant operating at 100% power, it was discovered during the review of an Arkansas Nuclear One Unit 1 past operability evaluation that an unanalyzed condition may have existed for a short period of time in which a door that serves as a High Energy Line Break (HELB) barrier may have been unlatched. With the door unlatched, an engineering evaluation concluded that a critical crack in the Main Feedwater pipe traversing the south penetration room would force the door (DR-19) open, creating a harsh environment in the adjoining Emergency Feedwater (EFW) pump room. Because the EFW [BA] pump room is not evaluated for harsh conditions, it must be conservatively assumed that both pumps may fail to operate following this HELB event. Investigation revealed that the most probable cause of the latch failure was due to wear of the latch bolt hole.

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Arkansas Nuclear One, Unit 1 | 05000313 | 2009 | - 003 - | 01 | 2 OF 3 |

## NARRATIVE

A. Plant Status

At the time this condition was identified, Arkansas Nuclear One, Unit 1 (ANO-1) was operating at 100% power.

B. Event Description

In January, Door 19 (DR-19) was discovered to be in an unlatched condition. The door was immediately latched reestablishing the barrier. An immediate operability was performed which concluded the door was capable of performing its design function based upon its ability to be latched; however, past operability was not thoroughly evaluated for the unlatched condition. On September 22, 2009, at approximately 1329 CDT, it was discovered during the review of this past operability that an unanalyzed condition may have existed for a short period of time when DR-19, which serves as a High Energy Line Break (HELB) barrier, was unlatched.

With the door unlatched, an engineering evaluation concluded that a critical crack in the Main Feedwater [SJ] pipe traversing the south penetration room would force the DR-19 open, creating a harsh environment in the adjoining Emergency Feedwater (EFW) [BA] pump room. Because the EFW pump room is not evaluated for harsh conditions, it must be conservatively assumed that both pumps may fail to operate following this HELB event.

C. Root Cause

Investigation revealed that the most probable cause of the latch failure was due to wear of the latch bolt hole. The repetitive motion of turning the door knob applies stress to the latch, latch holding plate, and bolt hole in the door. Eventually, this repetitive stress results in worn latch mechanism parts, which allow the bolt to back out obstructing the door from closing completely and latching.

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | 3. PAGE |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Arkansas Nuclear One, Unit 1 | 05000313 | 2009 | - 003 - | 01 | 3 OF 3 |

## NARRATIVE

D. Corrective Actions

Operability was immediately established by latching the door closed.

A preventative maintenance task which included specific instructions for latch inspections was developed for HELB and airtight doors similar to DR-19.

DR-19 will be replaced in the next refueling outage. Until the door can be replaced, monthly inspections of the DR-19 latch will be performed to verify proper installation. Additionally, daily tours of this area by Operations and other station personnel provide a means of verification that DR-19 remains in the closed, latched position.

E. Safety Significance

With the door unlatched, an engineering evaluation concluded that a critical crack (HELB) in the Main Feedwater pipe traversing the south penetration room would force the door (DR-19) open creating a harsh environment in the adjoining EFW pump room. Because the EFW pump room is not evaluated for harsh conditions, it must be conservatively assumed that both pumps may fail to operate following this HELB event.

F. Basis for Reportability

The unlatched door serving as a HELB barrier is reportable under 10 CFR 50.73(a)(2)(ii)(B) and 10 CFR 50.73(a)(2)(v)(B) as an unanalyzed condition that significantly degraded plant safety and a condition the could have prevented the fulfillment of a safety function.

G. Additional Information

There were no previous similar events reported as Licensee Event Reports by ANO.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].