

December 21, 2001
NG-01-1440

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station 0-P1-17
Washington, D.C. 20555-0001

Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49
Licensee Event Report #2001-007-00

File: A-120

Dear Sirs:

Please find attached the subject Licensee Event Report (LER) submitted in accordance with 10CFR50.73. There are no new commitments contained within this report.

Should you have any questions regarding this report, please contact this office.

Sincerely,



Rob Anderson,
Plant Manager - Nuclear

cc: Mr. James Dyer
Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532

NRC Resident Inspector - DAEC

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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 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.

FACILITY NAME (1)

Duane Arnold Energy Center

DOCKET NUMBER (2)

05000331

PAGE (3)

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TITLE (4)

Unplanned High Pressure Coolant Injection System Inoperability Due to an Oil Leak Caused by a Missing Front Ferrule in a Compression Fitting

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	30	2001	2001	007	00	12	21	2001	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)							
POWER LEVEL (10)		100	20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
			20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)
			20.2203(a)(1)			50.36(c)(1)(i)(A)			50.73(a)(2)(iv)(A)	73.71(a)(4)
			20.2203(a)(2)(i)			50.36(c)(1)(ii)(A)			50.73(a)(2)(v)(A)	73.71(a)(5)
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)	OTHER
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)		X	50.73(a)(2)(v)(D)	
			20.2203(a)(2)(v)			50.73(a)(2)(i)(B)			50.73(a)(2)(vii)	
			20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)	
			20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

John W. Karrick, Nuclear Licensing

TELEPHONE NUMBER (Include Area Code)

319-851-7901

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).

X

NO

EXPECTED
SUBMISSION
DATE (15)

MONTH

DAY

YEAR

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

At 1820 hours on October 30, 2001, with the plant operating at 100% power, the High Pressure Coolant Injection (HPCI) system was declared inoperable due to an oil leak. The leak was discovered during a walkdown by the system engineer. The leak was located on a compression fitting in the oil supply line to the HPCI turbine overspeed trip device. The amount of leakage (estimated at 90 drops per minute) was smaller than the oil system's makeup capacity, but the proximity of the leak to nearby high temperature steam piping resulted in the unplanned inoperable condition. The cause of the oil leak was a missing front ferrule in the compression fitting. The root causes were improper initial installation of the fitting and poor workmanship during re-assembly of the oil line during the last refuel outage (May, 2001). Contributing Factors include needed improvement in vendor work control and oversight, and inadequate detail in the turbine overhaul procedure. The leak was repaired and HPCI was returned to an operable status at 0306 hours on October 31, 2001. There were no actual safety consequences nor was there any impact on public health and safety as a result of this event.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
Duane Arnold Energy Center	05000331	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
		2001	007	00	

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

I. Description of Event:

At 1820 hours on October 30, 2001, with the plant operating at 100% power, the High Pressure Coolant Injection (HPCI) system was declared inoperable due to an oil leak. The "A" loop of the Residual Heat Removal (RHR) system, including the Low Pressure Coolant Injection (LPCI) mode, was out of service for pre-planned maintenance at this time. Therefore, a 72-hour Limiting Condition for Operation (LCO) was entered pursuant to Technical Specification (TS) 3.5.1 Condition H. There were several other LCO's in effect at the time, but none with additional impact on the HPCI LCO or that added to the significance of the event.

The oil leak was discovered during a walkdown by the system engineer. The leak was located on a compression fitting in the oil supply line to the HPCI turbine overspeed trip device. The amount of leakage (estimated at 90 drops per minute without the oil pump running) was smaller than the oil system's makeup capacity. However, with the oil pump running (as it would on a HPCI auto-start), the oil pressure would increase from 7 psig (auxiliary oil pump) to approximately 38 psig and the leakage could have increased. There was also a potential for the leaking oil to contact nearby, un-insulated, high-temperature, steam piping. The system was declared inoperable as a result of these considerations.

The oil leak was repaired and the system was restored to an available status later that day at 2255 hours. The LCO was exited at 0306 on October 31, 2001, after the completion of the HPCI Operability surveillance test.

II. Cause of Event:

During the October 30th repair effort, a missing front ferrule was noted upon disassembly of the leaking elbow. The elbow is a 90 degree, ¾ inch Swagelok compression fitting. Refuel Outage (RFO) 17 (April-May 2001) included an overhaul of the HPCI turbine. Maintenance history indicates that this overhaul was the most recent work that involved removal of this portion of the oil line. This work was performed by a turbine repair vendor (contractor, non-licensed, working for the mechanical maintenance department) during the outage. The root cause was poor assembly during initial installation of that particular fitting. The ferrule, if installed properly, would have been compressed onto the tubing and not have been able to fall off. The subsequent failure to identify the missing ferrule during re-assembly of the elbow is also considered a root cause, and is classified as poor workmanship. Two other HPCI system leaks from Swagelok fittings were also identified that were attributed to workmanship issues during the same project.

From the May 26, 2001 timeframe (when the outage work was completed) until the time of discovery, the HPCI system successfully passed several surveillance tests. It is believed that work to repair a different oil leak on the system's hydraulic actuator on October 16, 2001 disturbed the seal on the elbow that resulted in this event. There were no indications that oil had been leaking from this elbow prior to the recent maintenance on the actuator and associated oil lines.

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

V. Corrective Actions (continued):

3. The overhaul of the HPCI turbine has a 10-year frequency. Therefore, actions to address oversight and/or control of contractor work may need to be applied to other outage projects for the next refuel outage (RFO-18). A review of upcoming outage projects will be performed to apply lessons learned from this event. (AR 29207, Outage Management, due Sept. 30, 2002).
4. Additional detail and Quality Control inspection points will be added to the maintenance procedure (TURBIN-T147-01) used for the turbine overhaul. (AR 29209, Mechanical Maintenance, due May 31, 2002).

V. Additional Information:

Previous Similar Occurrences:

A review of LERs at DAEC over the last 3 years identified LER 2001-004 that involved an unplanned HPCI LCO associated with a steam trap drain plug failure. The corrective actions from that event are not expected to have prevented this event.

EIIS System and Component Codes:

High Pressure Coolant Injection System: BJ

Reporting Requirements:

A 10CFR50.72(b)(3)(v)(D) notification was made on October 30, 2001, and is listed as event number EN 38446. This report is being submitted pursuant to 10CFR50.73(a)(2)(v)(D).