

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
Duane Arnold Energy Center

DOCKET NUMBER (2)

0 5 0 0 0 3 3 1

PAGE (3)

1 OF 0 2

TITLE (4)

Shutdown Due to Increased Unidentified Drywell Leakage

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)							
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)					
0	4	1	3	8	4	8	4	0	1	3	0	5	0	0	0	
None												0	5	0	0	0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10)	1	0	0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)				
				20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)				
				20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)				
				20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)					
				20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)					
				20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)					

LICENSEE CONTACT FOR THIS LER (12)

NAME
James C. Smith, Technical Support Engineer

TELEPHONE NUMBER

AREA CODE

3 1 9 8 5 1 - 7 3 0 8

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD	
X	A	D	F	Q	V	A	3	9	1	Y
X	A	D	V	T	V	V	0	8	5	Y

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) ☒ NO ☐

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

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

During normal full power operation, unidentified leakage to the drywell floor drain sump increased to greater than the 5 gpm limit set by Technical Specifications. Minor drywell pressure, temperature and radiation increases confirmed the indication of increased leakage. Peak drywell pressure during the event was 1.7 psig (normal steady state pressure is approximately 1.3 psig due to the Mark I differential pressure system which is designed to maintain a higher drywell pressure than wetwell pressure). In accordance with Technical Specification 3.6.C.3, reactor shutdown was commenced. Leakage to the drywell had been recorded every two hours for the past 8 days after a small change in leakage was first observed. It should be noted that a reactor shutdown was scheduled to begin in less than 6 hours to perform surveillance tests and perform maintenance. After a controlled shutdown, a drywell inspection revealed that the major source of leakage was from a packing leak in the "A" recirculation pump discharge bypass valve and a packing leak from its associated vent valve. The leaks were stopped by adjusting the packing in the bypass valve and by backseating the vent valve.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Duane Arnold Energy Center	0500033184	—	013	—00	02	OF	02

TEXT (If more space is required, use additional NRC Form 365A's) (17)

On April 13, 1984, while the plant was in the run mode at approximately 100% power, preparations were being made for a scheduled shutdown to begin at 2100 hours for surveillance testing and maintenance. Since April 5, the plant had been monitoring drywell leakage every 2 hours, when an increase of unidentified leakage into the drywell was first observed. At the time increased monitoring began on April 5, unidentified leakage had increased from approximately .6 gpm to approximately 1.08 gpm. At the same time, identified leakage to the drywell equipment sump decreased by roughly the same amount, making the total leakage approximately unchanged. It was concluded, therefore, that the major source of unidentified leakage came from leakage normally reaching the equipment sump (identified leakage) that was being rerouted to the floor drain sump (unidentified leakage) and that no new major containment leakage was taking place. The unidentified leakage slowly increased and stabilized at around the 2 gpm rate with no increasing trend until 1400 hours on April 13. Total leakage had risen slightly (less than .5 gpm). At 1415 hours, the leakage to the drywell floor drain sump (unidentified leakage) increased to approximately 6 gpm which is above the limit of 5 gpm set by Technical Specification 3.6.C.1. Minor fluctuations in drywell pressure, temperature and radiation confirmed the leakage increase. Peak drywell pressure during the event was 1.7 psig (normal steady state operating pressure is approximately 1.3 psig). The higher drywell pressure is a result of the Mark I differential pressure system, which insures that the drywell is maintained at a higher pressure than the wetwell. Shutdown of the reactor was commenced at 1430 in accordance with Technical Specification 3.6.C.3 and an Unusual Event A-1 was declared. Communication was established with the NRC at that time and maintained until the Unusual Event was cancelled at 1408 on April 14. Peak unidentified leakage after shutdown was estimated at 15 gpm.

After an orderly shutdown was completed on April 14, an inspection of the drywell was performed. It was discovered that the major source of leakage was from the packing of the "A" recirculation pump discharge bypass valve (AD-V-4629) and from the packing of its associated vent valve (AD-VTV-16-24). A leak from the "B" feedwater check valve (SJ-V-14-1) was also discovered, but this leakage was only a minor contributor to the problem. The two major leaks were stopped by adjusting the packing on the discharge bypass valve and by backseating the vent valve. Further maintenance, including repacking, on all three leaking valves has been completed. Throughout the event, the plant operated safely within Technical Specifications. In addition to the Technical Specification limits, Iowa Electric has committed to the NRC to initiate shutdown if leakage increases by 2 gpm within 24 hours or doubles within 4 hours. Note that this criteria was not exceeded until shutdown was initiated on April 13. This event is reportable under 10 CFR 50.73(a)(2)(i) as the "completion of any nuclear plant shutdown required by the plant's Technical Specifications".

Iowa Electric Light and Power Company

May 10, 1984

DAEC-84-295

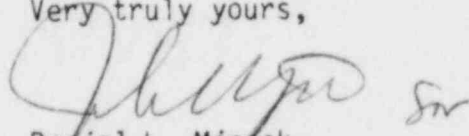
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Duane Arnold Energy Center
Docket No. 50-331
Op. License DPR-49
Licensee Event Report No. 84-013

Gentlemen:

In accordance with 10 CFR 50.73 please find attached a copy of the subject Licensee Event Report.

Very truly yours,



Daniel L. Mineck
Plant Superintendent - Nuclear
Duane Arnold Energy Center

DLM/JCS/pv

attachment

cc: Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

NRC Resident Inspector - DAEC

File A-118a

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