NUCLENAILD TUTOTION DEMONSTRATION STOTEM レ

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:	9105280069 DOC.DATE: 91/05/15 NOTARIZED: NO	DOCKET #
FACIL:50-331	Duane Arnold Energy Center, Iowa Electric Light & Pow	05000331
AUTH.NAME	AUTHOR AFFILIATION	
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WILSON, D.L.	Iowa Electric Light & Power Co.	
RECIP.NAME	RECIPIENT AFFILIATION	R

DAVIS, A.B. Region 3 (Post 820201)

SUBJECT: LER 89-015-01:on 891115, RWCU isolation occurred due to high differential flow condition while placing filter demineralizer bed in service.RCWU sys reviewed & no further problem encountered.

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Iowa Electric Light and Power Company

May 15, 1991 DAEC-91-0417

Mr. A. Bert Davis Regional Administrator Region III U. S. Nuclear Regulatory Commission 799 Roosevelt Road Glen Ellyn, IL 60137

> Subject: Duane Arnold Energy Center Docket No: 50-331 Op. License DPR-49 Licensee Event Report #89-015, Rev. 1

Gentlemen:

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

Duane Arnold Energy Center • 3277 DAEC Road • Palo, Iowa 52324 • 319/851-7611

Very truly yours,

David L. Wilson Plant Superintendent - Nuclear

DLW/KSP/pwj

cc: Director of Nuclear Reactor Regulation Document Control Desk U.S. Nuclear Regulatory Commission Mail Station P1-137 Washington, D. C. 20555

NRC Resident Inspector - DAEC

Dr. William R. Jacobs, Jr. GDS Associates, Inc. Suite 720 1850 Parkway Place Marietta, GA 30068-8237

File A-118a

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NRC Form 366A (6-89) LICENSEE EVENT REPORT (LER) TEXT CONTINUATION		ISSION	APPROVED OMB NO.3150-0104 EXPIRES: 4/30/92 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50,0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECOP AND REPORTS MANAGEMENT BRANCH (P-530). U.S. NUCLEA										
			REGULA THE PA OF MAN	ATOR	Y COMMISSIO VORK REDUCT MENT AND BU	N, V ION DGE	ASHINGTON PROJECT (31 T. WASHINGT	DC 20 50-0104 ON D	555, ANG), OFFIC C 20503	D TO E			
FACILITY NAME (1)	DOCKET NUMBER (2)		YEAR	LER	NUMBER(6)		REVISION		PAGE(3)			
Duane Arnold Energy Center	0 5 0 0 0 3	3 1	89		015	-	01	2	OF	4			
TEXT (If more space is required, use additional NRC Form 366A's) (17)	-									-			
On November 15, 1989, at approxim shutdown (reactor vented to atmos System (PCIS, EIIS System Code JM is the Reactor Water Cleanup (RWC isolation. The system isolated w was placed in service. The "A" be and precoated. The "B" bed, which runs in parall service with approximately 75 gal the time the "A" bed was being pl The isolation occurred due to a h inlet flow greater than outlet flo	nately 1351 ho sphere), a Pri 4) Group V iso CU) system (EI when the "A" f bed had just f lel with the "A lons per minu aced in servio nigh different ow) of greater	urs, w mary latio IS Sy ilter inish A" bea te flo ce. ial f than	with f Conta n occ stem demi ed be d, wa owing low co 40 ga	the inrurn Cocone incone s a th onco	e plant ment Iso red. Gi de CE) ralizer g backwa already mrough f dition (ons per	ir rol "I asl it (RV m	i cold ation up V Ded" ned at /CU inute						
II. CAUSE OF EVENT: It is suspected that the cause fo combination of the vessel being a air bubble within the "A" bed (Se RWCU inlet flow signal is taken u	or the different t atmospheric e Corrective A pstream of the	ntial press Actior filt	flow sure c 1 disc er de	co com cus min	ndition bined w sion). neraliza	i W vit T er	vasa han he sand						
the outlet flow signal is taken d When placing a bed in service, th suspected that when the "A" bed i within the bed slowly (due to the compressed allowing an increased i increase in the outlet flow signa bed outlet valve, the isolation of of isolation was approximately te	ownstream. e inlet valve nlet valve was reactor being nlet flow sigr l. Shortly af ccurred. Bed n gallons per	is op s open g at a nal wi ter b outle minut	ened ed, t thosp thout eginn t flo e.	fi che che a in w	rst. I air bu ric pre corresp g to op at the	t bb ss en ti	is le ure) nding the me	·					
III. ANALYSIS OF EVENT:													
This event had no effect on the sa appropriate valves isolated as des differential flow isolation signal of the beds on December 7th and 8t recirculation dissolved oxygen, an reviewed. There was no indication "A" bed during precoating causes a parameters when the bed is placed conditions, the effect on the safe the same.	afe operation signed in resp L. Following th, bed outlet nd main steam that the air a significant in service. e operation of	of th onse the ba cond line n bubb chang Durin the p	e pla to th ackwas uctiv radiat le wh e in g any plant	nt e i ity ict the ot wo	. The high precoat n level n enters above ther pla uld hav	s s ante	ycle were the c been						

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IV. CORRECTIVE ACTIONS

The RWCU system was unisolated at approximately 1354 hours and placed back in service with both beds in service. No further problems were encountered. A review of the RWCU flow instrumentation with the system in steady state operation did not indicate that the flow instruments were out of calibration in such a way that would contribute to the high differential flow condition.

Review of the computer point for RWCU high differential flow indicated that a differential flow condition existed for a significantly longer time when placing the "A" bed in-service versus placing the "B" bed in-service with the reactor at atmospheric pressure. In addition, it was noted that this effect was only seen when the "A" bed was placed in-service following a backwash and precoat cycle.

For this reason, the automatic backwash/precoat time sequences for both beds were subsequently recorded and compared to determine if the "A" side was malfunctioning. The results of this comparison did not indicate any significant differences between the two sequences, however when the beds were pressurized to 120 psig following the precoat cycle, the "B" bed pressurized almost instantly indicating no air was in the system. When the "A" bed was pressurized, it took approximately 15 seconds to reach pressure. This indicated that there was air in the "A" bed or its associated piping. Further investigation into the possible sources for air entering the system did not provide additional information as to how the air entered. It appears that the air enters the system during the precoat process as review of the fill and vent cycles prior to this process appear to be functioning properly. Although fill and vent cycles for the "A" bed appear to be adequate following review of the bed volume and fill rate, the fill time is somewhat shorter than that of the "B" bed. То provide consistent operation in the two beds, the fill time for the "A" bed will be increased to match that of the "B" bed.

Subsequent to submittal of LER 89-15 Rev. 0, the RWCU high differential flow time delay was increased from 15 to 45 seconds. This change in time delay is within the analyzed value for RWCU leakage. With this change in place, it is extremely unlikely that the RWCU system will isolate on high differential flow when a filter demineralizer is placed in service. The primary purpose for installing hardware to manually vent and fill the RWCU filter demineralizers would be to prevent RWCU isolations when placing the filter demineralizers in service. As the change in the time delay will serve this purpose, the hardware to allow manual venting and filling of the filter demineralizers will not be installed.

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NRC Form 366A (6-89)	U.S. NUCLEAR REGULATORY COMMISSION						APPROVED OMB NO.3150-0104									
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V. ADDITIONAL INFORMATION

A review of plant documentation indicated one similar event where putting a filter demineralizer bed in-service caused the RWCU system to isolate on high differential flow (this occurred on 7-21-83). It was suspected that an air bubble caused this isolation. One difference in this event was that the reactor was fully pressurized and at power.

This LER is being submitted to identify revisions to the original corrective actions.