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 RECIP. NAME RECIPIENT AFFILIATION
 REGION 3, CHICAGO, OFFICE OF THE DIRECTOR

SUBJECT: LER 79-001/03L-0 ON 790128: NO FLOW INDICATION NOTED FOR
 NUMBER 3 & 4 JET PUMPS. CAUSED BY FAILURE OF PERSONNEL TO
 REMOVE LEAD SHIELD PLUG FROM NOZZLE & LACK OF VERIFICATION
 THAT PIPE WAS CLEAR PRIOR TO CLOSURE. LEAD PLUG REMOVED.

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01 L 6 0 5 0 0 0 3 3 1 7 0 1 2 8 7 9 8 0 2 2 7 7 9 9
7 8 60 61 68 69 74 75 80
 REPORT SOURCE DOCKET NUMBER EVENT DATE REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

02 While operating the recirculation system in preparation for a hydrostatic
03 test, no flow indication was noted for the number 3 and 4 jet pumps. Flow
04 instrumentation was immediately tested and found operable. Additional
05 testing was then performed which confirmed blockage existed in either
06 the N2B riser or in the associated jet pumps numbers 3 and 4. Planning was
07 begun for investigating the nature and position of the blockage and for
08 its removal. A review of repair procedures was begun. (See R0 78-030).
7 8 9

09 CB 11 A 12 F 13 PI PE XX 14 C 15 Z 16
7 8 9 10 11 12 13 18 19 20
 SYSTEM CODE CAUSE CODE CAUSE SUBCODE COMPONENT CODE COMP. SUBCODE VALVE SUBCODE
17 7 9 0 0 1 0 3 L 0
21 22 23 24 26 27 28 29 30 31 32
 LER/RO REPORT NUMBER EVENT YEAR SEQUENTIAL REPORT NO. OCCURRENCE CODE REPORT TYPE REVISION NO.
X 18 Z 19 C 20 Z 21 0 0 0 0 Y 23 N 24 N 25 C 3 1 10 26
33 34 35 36 37 40 41 42 43 44 47
 ACTION TAKEN FUTURE ACTION EFFECT ON PLANT SHUTDOWN METHOD HOURS ATTACHMENT SUBMITTED NPRD-4 FORM SUB. PRIME COMP. SUPPLIER COMPONENT MANUFACTURER
 CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

10 Investigation revealed consultant personnel managing the replacement of
11 all recirc system inlet nozzle safe ends had not followed procedures properly
12 and had apparently not ensured a lead shield plug was removed from
13 the N2B nozzle. Contributing cause lack of quality verification that pipe
14 was clear prior to closure. Lead plug removed.
7 8 9

15 G 28 0 0 0 29 NA 30 A 31 Operator Observation 32
7 8 9 10 12 13 44 45 46 60
 FACILITY STATUS % POWER OTHER STATUS METHOD OF DISCOVERY DISCOVERY DESCRIPTION
16 Z 33 Z 34 NA 35 NA 36
7 8 9 10 11 44 45 80
 ACTIVITY CONTENT AMOUNT OF ACTIVITY LOCATION OF RELEASE
 PERSONNEL EXPOSURES
 NUMBER TYPE DESCRIPTION 39
17 0 0 0 37 Z 38 NA
7 8 9 11 12 13 80
 PERSONNEL INJURIES
 NUMBER DESCRIPTION 41
18 0 0 0 40 NA
7 8 9 11 12 80
 LOSS OF OR DAMAGE TO FACILITY
 TYPE DESCRIPTION 43
19 Z 42 NA
7 8 9 10 80
 PUBLICITY
 ISSUED DESCRIPTION 45
20 N 44 NA
7 8 9 10 80

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DUANE ARNOLD ENERGY CENTER

Iowa Electric Light and Power Company

LICENSEE EVENT REPORT-Supplemental Data

Docket No. 050-0331

Licensee Event Report Date: 022779

Reportable Occurrence No: 79-001

Event Description - While operating the recirculation system in preparation for a hydrostatic test, no flow indication was noted for the number 3 and 4 jet pumps. Flow instrumentation was immediately tested and found operable. Additional testing was then performed which confirmed blockage existed in either the N2B riser or in the associated jet pumps numbers 3 and 4. Planning was begun for investigating the nature and position of the blockage and for its removal. A review of repair procedures was begun. (See RO 78-030).

Cause Description - Investigation revealed consultant personnel managing the work involved in the replacement of all recirculation system inlet nozzle safe ends had not followed procedures properly and had apparently not ensured a lead shielding plug was removed from the N2B nozzle prior to closure of the inlet piping. A contributing cause was lack of quality verification that the piping was completely clear prior to closure. An investigation of this matter is continuing.

The lead shielding plug causing the blockage was comprised of ten separate pieces cut and sized to conform to the pipe I.D. In order to prevent the lead plug from coming in contact with the inconel pipe, the plug was fit inside a can consisting of a perimeter section and a backing plate. A fiberscope inspection of the pipe internals revealed the plug had been displaced and broken up by water flow in the recirculation system.

Corrective Action - Jet pumps #3 and #4 were removed from the reactor vessel. Inspection of the riser pipe located 6 lead plug sections and the can perimeter section. The 6 plug sections and can perimeter section were removed from the riser pipe, and the pipe was reinspected to ensure no foreign objects remained. Inspection of the can perimeter section revealed several small tabs used to secure the backing plate were missing. Inspection of the jet pumps revealed 3 plug sections and the backing plate lodged in the nozzles. These were removed and inspected. The backing plate was found to have a section missing. Next, selected fuel cells were removed from the core in an effort to locate the 10th lead plug section. This section was located near the center of the bottom head and removed. Reactor reassembly was then begun. A lost parts analysis for the missing can perimeter section tabs has indicated they will cause no significant problems. A lost parts analysis of the missing section of backing plate is currently in progress. In addition, an analysis has been performed to evaluate possible lead contamination of reactor inconel parts and the results indicate there will be no significant effect on these parts.

An update to this report will be submitted when the results of the lost parts analysis are available.