NRC FORM 195 (2-76)

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NUMBER 50-237

FILE NUMBER INCIDENT REPORT

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TO:	FROM:	DATE OF DOCUMENT
Mr. James G. Keppler	Commonwealth Edison Company Morris, Illinois B. B. Stephenson	3/11/77
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DESCRIPTION

Ltr. trans the following:

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PLANT NAME:

Dresden Unit No. 2 (1-P)

RJL

DO NOT REMOVE

ENCLOSURE

Licensee Event Report (RO 50-237/1976-19) on 3/27/76 (Update Rpt) concerning loose restrainer clamp bolt keepers being found on 19 of 20 jet pumps and a total of 30 keepers out of 40 were found to be loose as a result of broken tack welds....

(2-P)

NOTE: IF PERSONNEL EXPOSURE IS INVOLVED SEND DIRECTLY TO KREGER/J. COLLINS

FOR ACTION/INFORMATION

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Dresden Nuclear Power Station
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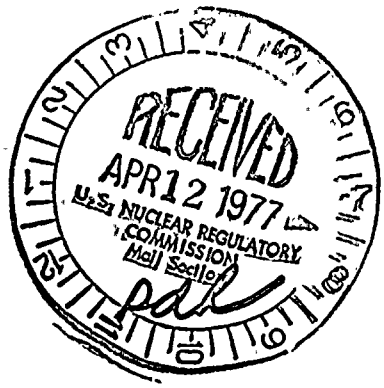

BBS Ltr. #77-205

March 11, 1977

REGULATORY DOCKET FILE COPY

Mr. James G. Keppler, Regional Director
Directorate of Regulatory Operations - Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Enclosed please find an update report to Reportable Occurrence report number 50-237/1976-19. This report is being submitted to your office in accordance with the Dresden Nuclear Power Station Technical Specifications, Section 6.6.B.

B. B. Stephenson
Station Superintendent
Dresden Nuclear Power Station

BBS:jo

Enclosure

cc: Director of Inspection & Enforcement
Director of Management Information & Program Control
File/NRC

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MAR 18 1977

CONTROL BLOCK: (1–6)

UPDATE REPORT–PREVIOUS REPORT DATE 4/26/76

(PLEASE PRINT ALL REQUIRED INFORMATION)

7–8	LICENSEE NAME (9–14)	LICENSE NUMBER (15–25)	LICENSE TYPE (26–30)	EVENT TYPE (31–32)
01	ILDRS2	00–00000–00	4 1 1 1 1	0 3

7–8	CON'T	CATEGORY (57–58)	REPORT TYPE (59)	REPORT SOURCE (60)	DOCKET NUMBER (61–68)	EVENT DATE (69–74)	REPORT DATE (75–80)
01	CON'T		L	L	050–0237.	032776	031177

EVENT DESCRIPTION

02 During jet pump inspection, loose restrainer clamp bolt keepers were found on
03 19 of the 20 jet pumps. Of a total of 40 keepers, 30 were found to be loose
04 as a result of broken tack welds. These keepers are tack-welded to the restrainer
05 assembly to ensure that the gate clamp boltsremain tight. Immediately after
06 this inspection,a tension test was performed on one of the jet pump hold-down

(Continued)

7–8	SYSTEM CODE (9–10)	CAUSE CODE (11)	COMPONENT CODE (12–17)	PRIME COMPONENT SUPPLIER (43)	COMPONENT MANUFACTURER (44–47)	VIOLATION (48)
07	CB	E	PUMPXX	N	G080	N

CAUSE DESCRIPTION

08 In a report entitled "Laboratory Examination of Jet Pump Restrainer Assembly
09 from Dresden 2," General Electric stated that the keeper tack weld failures
10 were probably caused by vibrational fatigue cracking. It was conjectured that,

(Continued)

7–8	FACILITY STATUS (9)	% POWER (10–12)	OTHER STATUS (13–44)	METHOD OF DISCOVERY (45)	DISCOVERY DESCRIPTION (46–80)
11	H	000	NA	B	NA

7–8	FORM OF ACTIVITY RELEASED (9)	CONTENT OF RELEASE (10)	AMOUNT OF ACTIVITY (11–44)	LOCATION OF RELEASE (45–80)
12	Z	Z	NA	NA

PERSONNEL EXPOSURES

7–8	NUMBER (9–11)	TYPE (12)	DESCRIPTION (13–80)
13	000	Z	NA

PERSONNEL INJURIES

7–8	NUMBER (9–11)	DESCRIPTION (12–80)
14	000	NA

OFFSITE CONSEQUENCES

15 NA

LOSS OR DAMAGE TO FACILITY

7–8	TYPE (9)	DESCRIPTION (10–80)
16	Z	NA

PUBLICITY

17 NA

ADDITIONAL FACTORS

18 NA

19

NAME: Edward L. Seckinger PHONE: Ext. 265

GPO 861-667

EVENT DESCRIPTION (Continued)

beams to determine whether any further slackening had occurred. The hold-down beam tension was found to be 3850 psi: the minimum acceptable tension is 2800 psi.

The loosened keepers were rewelded to original specifications and were successfully retested. The original keepers on jet pump #5, however, could not be tack-welded without exhausting all accessible rim material, and the restrainer gate assembly and both clamp bolt keepers were replaced. The original restrainer gate assembly and clamp bolt keepers from jet pump #5 were sent to General Electric for analysis.

Each restrainer assembly was found in its proper position, with both clamp bolts fully tightened. The keeper failures had no effect on jet pump operation. Broken tack welds on jet pump restrainer clamp bolt keepers have been found on two previous occasions — in May, 1973, and July, 1975. These events each involved two keeper failures on Unit-3. (50-237/1976-19)

CAUSE DESCRIPTION (Continued)

with a single tack weld, the keeper tends to be lifted off the gate surface as the result of weld shrinkage. With the keeper thus supported by the weld, any jet pump assembly vibrations induce the keeper to vibrate, ultimately fatiguing the weld.

As corrective action, General Electric recommended that two tack welds be placed 180° apart on each keeper. By securing the keeper in this manner, what was termed the "point support mode" would be eliminated, according to the report.

As previously reported, the station had already surmised that the keeper tack weld failures were caused by vibrational fatigue. The station's original objective was to reinstall the keepers with two tack welds 180° apart. However, difficulties were encountered in operating the welding equipment, in obtaining a suitable welding arc (ground), and in seating the keeper rims. Furthermore, there did not appear to be sufficient accessible keeper rim material to permit the placement of two diametrically opposed tack welds. Because of these considerations, the loosened keepers were rewelded to original specifications: i.e., one tack weld per keeper.

The station plans to inspect these welds during the next refueling outage, and will reconsider General Electric's recommendation after this inspection.