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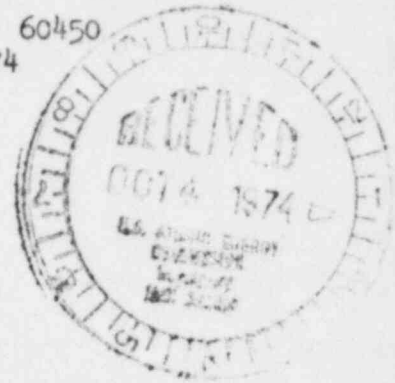
BBS Ltr.#689-74

Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450
September 26, 1974



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

SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.B OF THE TECHNICAL SPECIFICATIONS.
LEAKAGE IN FEEDWATER LINE PRESSURE TAP, UNIT 3.

References: 1) Regulatory Guide 1.16 Rev.1 Appendix A

2) Notification of Region III of AEC Regulatory Operations
Telephone: Mr. F. Maura, 1400 hours on September 21, 1974
Telegram: Mr. J. Keppler, 1245 hours on September 23, 1974

3) Drawing Number: M-347 (S&L)

Report Number: 50-249/74-28

Report Date: September 26, 1974

Occurrence Date: September 20, 1974

Facility: Dresden Nuclear Power Station, Morris, Illinois

IDENTIFICATION OF OCCURRENCE

Leakage in feedwater line pressure tap, Unit 3.

CONDITIONS PRIOR TO OCCURRENCE

Unit 3 was at a steady-state thermal power of 2222 MWt and an electrical load of 749 MWe at the time of the occurrence.

DESCRIPTION OF OCCURRENCE

At about 2010 hours on September 20, 1974, steam leakage and dropping water were noted on the feedwater line in the feedwater regulating valve area.

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At 2020 hours on the same day, a load drop to shutdown at the rate of 100 MWe per hour was initiated. This drop had been scheduled previously for surveillance testing unrelated to the present incident.

At 2022 hours, the load drop rate was increased to 5 MWe per minute as a result of the present incident.

At 2318 hours on September 20, 1974, Unit 3 was off system and locked in the shutdown mode.

Normal contamination control methods were utilized for this relatively small leak.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Equipment Failure)

The junction point of pressure tap 3-3241-12A, a 3/4-inch line, with the 24-inch feedwater regulating valve inlet manifold, was cracked at the weld and leaking.

ANALYSIS OF OCCURRENCE

The leak as it existed at the time of discovery posed only a local contamination problem, with no appreciable effect on reactor operation. No damage to surrounding equipment occurred, and no unusual radiation exposures resulted. The total leakage amounted to about six gallons of primary feedwater, which, being downstream of the condensate demineralizers, has an activity of less than 10^{-7} Curies per gallon (gross beta-gamma).

Had the leak developed before discovery into a full breakaway of the pressure tap, the contamination problem in the vicinity of the leak would have been more severe, but due to the relatively small size of the line, no danger to safe reactor operation or adequate core cooling would have existed. No danger to public or plant personnel existed at any time.

The junction weld that was leaking was probably strained during the severe vibrations that occurred in the Unit 3 feedwater system on June 23, 1974 (See Incident I12-3-74-20). All of the joints and welds in the 24-inch feedwater piping were checked by magnetic particle testing following that incident, but the 3/4-inch joint of the pressure tap was not checked.

CORRECTIVE ACTION

The pressure tap involved, originally connected to a feedwater low pressure switch, is no longer used. Thus, the tap line was completely disconnected, and the junction point capped and welded. The weld bead was magnetic particle tested for integrity.

In addition, the 3241-12B pressure tap line, also no longer used, was disconnected, and the junction capped, welded, and tested, to alleviate any similar failure in the future.

These two taps are the only ones (of the many feedwater line taps) that are in the vicinity where severe vibrations occurred on June 23, 1974. (See "Analysis of Occurrence" above).

FAILURE DATA

The failure occurred at the socket-welded joint between the 3-3201 feedwater line (24-inch diameter, of schedule 120 A 106 Grade B steel) and the 3-3241-12A pressure tap line (3/4-inch diameter, of A-105 Grade II steel). See Reference 3.

Sincerely,

B. B. Stephenson
Superintendent

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