



Commonwealth Edison

Dresden Nuclear Power Station
R.R. #1
Morris, Illinois 60450
Telephone 815/942-2920

December 30, 1985

DJS LTR: 85-1187

James G. Keppler
Regional Administrator
Director of Inspection and Enforcement
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Reference: DJS LTR 85-1120 to J. G. Keppler from D. J. Scott, dated
November 27, 1985.

Dear Sir:

This letter is in reference to Confirmatory Action Letter 85-04
regarding the Main Steam Line Snubber Monitoring System for Dresden
Unit 2. Item 2 of this Confirmatory Action Letter requires a verbal
notification to Region III within 2 working days followed by a writ-
ten report and safety evaluation within 30 calendar days.

Four occurrences have been identified during this reporting period.

- Occurrence #22 Notification made to J. Harrison by J. Achterberg
on December 6, 1985
- Occurrence #23 Notification made to D. Danielson by J. Achterberg
on December 17, 1985
- Occurrence #24 Notification made to D. Danielson by E. Armstrong
on December 23, 1985
- Occurrence #25 Notification made to D. Danielson by G. Smith on
December 27, 1985

The written reports and safety evaluations when required for these
occurrences are attached.

Sincerely,

D. J. Scott
Station Manager
Dresden Nuclear Power Station

DJS:JW:hjb

Enclosure

cc: J. Almer
J. Welch
J. Achterberg
J. Williams
File/Misc.
File/Numerical

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Occurrence #22

On December 4, 1985, at 2153 hours, Unit 2 was operating at a steady power of 99.7% (2520 MWt) and a load of 820 MWe when spikes occurred on the strain gages (SG) associated with snubbers 52 and 53. The Linear Variable Displacement Transformer (LVDT) on snubbers 46 and 51 also showed spikes at the precise time of the SG indications. The signal seen on the SG of snubber 52 correlated to 23 kips of tension and lasted less than 5 milliseconds (ms) before returning to its original equilibrium state. The SG associated with snubber 53 exhibited 18 kips of compression in the same time span. The corresponding LVDT showed a small minor spike at the exact time of the SG occurrences which is not characteristic of a realistic force. An actual force would first exhibit a force on the SG followed by a subsequent LVDT movement.

The LVDT's associated with snubbers 46 and 51 registered movements of +1.3 inches and -1.1 inches respectively. These occurred at the same time and of the same duration as the SG occurrences. After the spikes, the LVDT's returned to their equilibrium state present before the indication. A linear movement of these magnitudes, +1.3 and -1.1 inches in less than 5ms, is outside the design criteria of the snubber (.02g or 7.72 inches/sec²). Because of the reasons set forth above, this occurrence can be attributed to electrical noise resulting in the spurious actuation of the monitoring system. The source of noise remains unknown. Therefore, the safety significance of this event is minimal since the reactor was operating in a steady state mode and the actuations can be attributed to spurious noise and not an actual pipe movement.

Occurrence #23

On December 14, 1985, at 0812 hours, and on December 16, 1985, at 1132 hours and 1359 hours, single spikes occurred on the Linear Variable Displacement Transformer (LVDT) associated with snubber 46. On December 14, Unit 2 was operating at a steady power of 98.7% (2495 MWt) and a load of 820 MWe, similarly on December 16 Unit 2 was also at a steady power of 98.9% (2500 MWt) and a load of 820 MWe. In each instance the spike on the LVDT for snubber 46 was the only signal to register on either the LVDT's or the strain gages (SG) of a reportable level. The December 14 occurrence was the only trigger that any discernable movement could be seen on the SG, and then only occurring on SG for snubbers 52 and 53. All the indications on the LVDT for snubber 46 were of a large magnitude and short duration.

| | |
|-------------------------------|---------------------------------------|
| Dec. 14, 1985 @ 812 hours | 1.6" in magnitude 10ms in duration |
| Dec. 16, 1985 @ 1132 hours | 1.2" in magnitude 4ms in duration |
| Dec. 16, 1985 @ 1359 hours | 1.3" in magnitude 3ms in duration |

With the large linear movements indicated by the signals (outside the design limits of the snubber) and the reactors operation in a steady state mode, these actuations can be attributed to spurious electrical noise and not actual pipe movement. The source of noise remains unknown.

Occurrence #24

On December 20, 1985, at 0423 hours, Unit 2 was operating at a steady power of 99.3% (2150 MWt) and a load of 820 MWe when spikes occurred on the Linear Variable Displacement Transformer (LVDT) associated with snubbers 50, 51 and 52 while no indications were seen on the other LVDT's or strain gages (SG). The signals seen on the LVDT 50, 51 and 52 correlated to movements of -5.7, -5.8, and -4.0 inches respectively with the signals returning to their equilibrium state after approximately 4 milliseconds. The SG's showed no corresponding force signature to the indicated large linear movement. Therefore, this occurrence can be attributed to electrical noise resulting in the spurious actuation of the monitoring system. This conclusion is substantiated by the fact that the magnitude and duration of this occurrence is outside the design criteria of the snubber. The source of electrical noise remains unknown.

Occurrence #25

On December 24, 1985, at 1306 hours, and on December 26, 1985, at 2216 hours, multiple single spikes occurred on the Linear Variable Displacement Transformer (LVDT) associated with snubber 46. On December 24, Unit 2 was operating at a steady power of 100% (2527 MWt) and a load of 825 MWe. Similarly, on December 26 Unit 2 was also at a steady power of 99.3% (2509 MWt) and a load of 820 MWe. Review of the Unit Operator and Shift Engineer logs show that no unusual or transient conditions existed.

The December 24 occurrence consisted of 5 individual spikes on the LVDT for snubber #46, all happening within 3 seconds of each other, and encapsulated within one monitor trigger. The signal returned to steady state immediately following the indications. The magnitude and duration of these indications, are;

| | <u>MAGNITUDE</u> | <u>DURATION</u> |
|----|------------------|-----------------|
| 1) | 1.2" | 2ms |
| 2) | .8" | 2ms |
| 3) | .9" | 2ms |
| 4) | 1.7" | 2ms |
| 5) | 1.0" | 2ms |

During these indications, the corresponding strain gage (SG) showed no movement. Similarly, the other SG and LVDT of the other snubbers showed no indications whatsoever.

The December 26 occurrence consisted of only two spikes on the LVDT for snubber #46 which were spaced 4 seconds apart, and were also encapsulated on a single monitor trigger. The first spike had a magnitude of +1.5", while the second magnitude was +1.0". Both of the spikes lasted less than 3 milliseconds and the signal returned to its steady state immediately following the indications.

The large linear movements indicated by the signals are outside the design limits of the snubber and the movements were indicated without any SG signature. Therefore, with the reactors operation in a steady state mode, these actuations can be attributed to spurious electrical noise and not an actual pipe movement. The source of noise remains unknown.