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Regulatory

File No.

50-237

BBS Ltr. #852-74

Dresden Nuclear Power Station
 R. R. #1
 Morris, Illinois 60450
 November 29, 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.A OF THE TECHNICAL SPECIFICATIONS
HALOGEN AND PARTICULATE RELEASE GREATER THAN TECHNICAL SPECIFICATION LIMIT

- References: 1) Regulatory Guide 1.16 Rev. 1 Appendix A
- 2) Notification of Region III of AEC Regulatory Operations
 Telephone: Mr. P. Johnson, 1540 hours on November 21, 1974
 Telegram: Mr. J. Keppler, 1600 hours on November 21, 1974

Report Number: 50-237/1974-70

Report Date: November 29, 1974

Occurrence Date: November 9, 1974

Facility: Dresden Nuclear Power Station, Morris, Illinois

IDENTIFICATION OF OCCURRENCE

Total station halogen and particulate release rate greater than 100% of Technical Specification limit. This represents an unplanned release of radioactive material from the site boundary.

CONDITIONS PRIOR TO OCCURRENCE

On November 8, 1974 Unit 1 was operating at approximately 472 MWt and 150 MWe, Unit 2 was shutdown for refueling and Unit 3 was operating at 1345 MWt and 429 MWe. Release rates for iodines and particulates with half lives greater than 8 days were calculated to be as follows:



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	<u>Unit 1 Chimney</u>	<u>Unit 2/3 Chimney</u>	<u>Unit 2/3 Reactor Vent Stack</u>
Iodine-131	7.9×10^{-8} Ci/sec	3.87×10^{-7} Ci/sec	2.1×10^{-8} Ci/sec
Particulates	1.6×10^{-8} Ci/sec	8.0×10^{-8} Ci/sec	2.8×10^{-8} Ci/sec

These release rates correspond to 0.6 of the Technical Specification limit.

DESCRIPTION OF OCCURRENCE

On November 19, 1974 Iodine-131 release rate data, collected since November 1, 1974, from the Unit 1 chimney, Unit 2/3 chimney, and Unit 2/3 reactor vent stack were recalculated using new geometry-efficiency factors for the gamma well counting equipment and updated chimney flow factors. The use of the new factor increased calculated Iodine-131 release rates by approximately 65 percent.

On November 21, 1974 the iodine cartridges and particulate filters from the Unit 2/3 Reactor Vent Stack were analyzed after allowing decay of radio-nuclides with half lives less than eight days. These samples were collected from the reactor vent stack for the period of November 7, 1974 through November 14, 1974. With these results, the total station release rates for Iodine-131 and particulates were calculated for November 9, 1974 and found to have exceeded the Technical Specification limit. The following are the Iodine-131 and particulate release rates for the various monitored release points on November 9, 1974:

	<u>Unit 1 Chimney</u>	<u>Unit 2/3 Chimney</u>	<u>Unit 2/3 Reactor Vent Stack</u>
Iodine-131	4.4×10^{-8} Ci/sec	1.92×10^{-6} Ci/sec	2.1×10^{-8} Ci/sec
Particulates	9.0×10^{-9} Ci/sec	1.62×10^{-6} Ci/sec	2.8×10^{-8} Ci/sec

The above release rates correspond to 1.4 times the Technical Specification limit.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Other)

The cause of the occurrence was the elevated release rates of Iodine-131 and particulates from the Unit 2/3 chimney on November 9, 1974. These release rates were caused by the failure of Unit 3 "A" air ejector rupture disk as reported to you in Abnormal Occurrence Report number 50-249/1974-34 dated November 19, 1974.

ANALYSIS OF OCCURRENCE

On November 9, 1974 at 0720 hours, the failure of the Unit 3 "A" air ejector rupture disk occurred. Stack gas activity monitor charts indicated that at this time and for a period of approximately three hours after the failure, chimney release rates of noble gas increased. As previously reported, this noble gas release did not exceed Technical Specification limits. It is assumed that the majority of the Iodine-131 and particulate radioactivity collected on the 24 hour Unit 2/3 composite filter paper and charcoal cartridge for November 9, 1974 was during the three hour period. Calculations performed at the station using the above assumption, a conservative concentration factor (X/Q), and I-131 inhalation as the major dose pathway to the general public, indicate the inhalation dose to the thyroid due to Iodine-131 release was less than 0.1 millirem. This result is well below the 10 CFR 20 criteria for doses in unrestricted areas. A more precise determination of the total dose has been requested from our environmental contractor.

By station request, on November 10, 1974 upwind and downwind samples of grass, soil, and air particulates were collected and analyzed by our environmental contractor. The results of analysis of these parameters indicate no positive radioactive concentration due to station operations.

CORRECTIVE ACTIONS

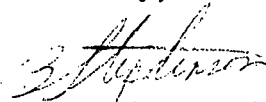
On November 9, 1974 following an orderly shutdown and turbine trip the Unit 3 reactor scrambled. Following the reactor scram, the steam jet air ejector rupture disk was replaced.

Release rate data for Iodine-131 and particulates on November 10, 1974 are as follows:

	<u>Unit 1 Chimney</u>	<u>Unit 2/3 Chimney</u>	<u>Unit 2/3 Reactor Vent Stack</u>
Iodine-131	9.2×10^{-8} Ci/sec	4.35×10^{-7} Ci/sec	2.1×10^{-8} Ci/sec
Particulates	1.6×10^{-8} Ci/sec	2.0×10^{-8} Ci/sec	2.8×10^{-8} Ci/sec

The above release rates correspond to 0.6 of the Technical Specification limit.

Sincerely,



B. B. Stephenson
Superintendent

BBS:DAA:do