ABNORMAL OCCURRENCE REPORT

Report No.: BFAO-50-260/7421W
Report Date: October 25, 1974
Occurrence Date: October 17, 1974
Facility: Browns Ferry Nuclear Plant unit 2

Identification of Occurrence

Contrary to the Browns Ferry Nuclear Plant Final Safety Analysis Report, Section 9.4, the unit 2 offgas HEPA filters were not installed before startup.

Conditions Prior to Occurrence

Unit 2 was in the cold shutdown condition during forced maintenance outage when the absence of both offgas HEPA filters was discovered. The unit was in the startup test program and had operated the equivalent of 300 full-power hours between July 7 and October 12, 1974, achieving a maximum power level of 64 percent.

Description of Occurrence

On October 4, 1974, during a routine analysis of the stack monitor particulate filter, with unit 1 shut down and unit 2 at about 60 percent power, a slight increase in activity was noted for the sample period of October 1-2. The particulate decontamination factor (DF) for the in-service unit 2 offgas HEPA filter 2A (assumed to be installed) was measured on October 5, 1974. DF results of about 1.2 indicated that the performance of filter 2A was questionable; and the standby filter 2B (also assumed to be installed) was immediately valved into service. A DOP test was scheduled for the next unit 2 outage. Because of combustible gases, a DOP test is not conducted with the offgas system in service. On October 7, the particulate DF of HEPA filter 2B was measured to be about 2.0, also indicating questionable performance. That same day at 1456 hours, unit 2 tripped by main transformer protective relay operation and an outage was started. On October 16, during the outage, both unit 2 HEPA filters failed to pass DOP tests. Filter assembly 2B was opened, and the absence of the HEPA filter was discovered. On October 17, it was discovered that HEPA filter 2A was also not installed.

Analysis of Occurrence

Failure to install the filters passed unnoticed because there was no discernible increase in stack release rates as a result of unit 2 operation. The management control to verify filter performance was a DOP test conducted on July 27, 1974, following open vessel testing and before nuclear heatup. These DOP tests apparently satisfied test requirements but are now recognized invalid because the sample line was blocked by foreign matter and the sample probe was not sealed into the sample line, thus permitting air to be drawn into the sample probe.

No airborne release rates were exceeded during unit 2 operation. The plant average I-131 and particulate release rates from July 7 through October 12, 1974, indicate that they were 4.44×10^{-4} uCi/sec and 1.64×10^{-3} uCi/sec, respectively, compared to the technical specification quarterly limit of 0.8 uCi/sec. Atmospheric monitors surrounding the plant did not detect any increase in particulate activity attributable to the operation of Browns Ferry Nuclear Plant since the startup of unit 2.

Corrective Action

Following the discovery of this incident, all unit 2 offgas HEPA filter sample lines were blown out with station air. Proper clearing of the blocked offgas HEPA filter effluent sampling line was demonstrated by free air flow discharge from the sample line opening when station air was forced into the offgas system at another point.

New HEPA filters were installed in 2A and 2B offgas filter housings. The adequacy of DOP testing was confirmed by conducting DOP tests with and without an HEPA filter installed. Final valid DOP test results show 100 percent removal efficiency for particles $\geq$ 0.3 microns.

A sign-off will be added to the offgas preoperational test TVA-15 for unit 3 to verify the installation of both 3A and 3B HEPA filters. The DOP test requirement will be removed from STI-1 and placed in preoperational test TVA-15 to ensure that the installation was satisfactory and meets the criteria specified in the FSAR before unit 3 startup. Additionally, the DOP test procedure will be revised to require that all sample lines be blown out before testing and that all sample connections are properly sealed during testing.

Although unit 1 offgas HEPA filters have separate and unique DOP sampling lines, DOP test results for both 1A and 1B filters will be validated at the next scheduled outage. DF values for both unit 1 offgas HEPA filters confirm the presence of HEPA filters in each filter housing.

Failure Data

Not applicable.

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE
37401

TVA
ANNIVERSARY OF PEOPLE IN PARTNERSHIP

October 25, 1974

Mr. Edson G. Case
Acting Director of Licensing
Office of Regulation
U.S. Atomic Energy Commission
Washington, DC 20545

Dear Mr. Case:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 2 - DOCKET NO. 50-260 - FACILITY OPERATING LICENSE DPR-52 - ABNORMAL OCCURRENCE REPORT BFAO-50-260/7421W

The enclosed report is to provide details concerning the finding that both sets of offgas HEPA filters were not installed and is submitted in accordance with Appendix A to Regulatory Guide 1.16, Revision 1, October 1973. This event occurred on Browns Ferry Nuclear Plant unit 2 on October 17, 1974.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

for E. F. Thomas
Director of Power Production

Enclosure
CC (Enclosure):
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230 Peachtree Street, NW., Suite 818
Atlanta, Georgia 30303

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excident

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