



831 Power Building

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

July 11, 1975

Mr. Donald F. Knuth, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Knuth:

BROWNS FERRY NUCLEAR PLANT UNIT 3 - REPORTABLE DEFICIENCY -  
TURBINE ROOM SUPPLY AND EXHAUST FANS - LACK OF INTERLOCKS

Initial report of the subject deficiency was made to NRC-IE,  
Region II, Inspector G. R. Klingler on June 12, 1975. In  
compliance with paragraph 50.55(e) of 10 CFR Part 50, we  
submit the enclosed final report.

Very truly yours,

*J. E. Gilleland*  
J. E. Gilleland

Assistant Manager of Power

Enclosure

CC (Enclosure):

Mr. Norman C. Moseley, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 818  
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Inquiry

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BROWNS FERRY NUCLEAR PLANT UNIT 3  
TURBINE ROOM SUPPLY AND EXHAUST FANS  
LACK OF INTERLOCKS

## FINAL REPORT

On 12, 1975, an initial report was made by telephone to NRC Region II by G. R. Klingler by T. W. Barkalow and R. D. Bradley. The initial report was made in compliance with 10CFR50.55(e). This is the final report on the occurrence.

Statement of Deficiency

During the preoperational test TVA-19, it was discovered that there were no interlocks between the supply and exhaust fans. The lack of interlocks meant that there was no control system to prevent a person from turning on more supply fans than exhaust fans. It would thereby be possible to have more supply than exhaust capacity thus pressurizing the turbine room.

Control System Deficiency

The control system for the turbine room supply and exhaust fans was designed for manual operation with no interlocks. Since the Browns Ferry design specifies that the turbine building be maintained at a slight negative pressure and that the exhaust air be monitored, an implicit assumption in the design is that a reactor operator or workman would not turn on more supply than exhaust capacity. However, without an interlock to prevent such an occurrence, it is not possible to rule out human error in turning the supply and exhaust fans off and on.

Implications

The turbine room ventilation system is not safety-related. However, federal regulations require that all effluents from nuclear power plants be monitored for radioactivity. Thus the air exhausted from the turbine room must be monitored. If the turbine room were to be accidentally pressurized, some air would be exhausted through unmonitored exits (doorways, stairways, cracks, etc.). Assuming that a radioactive source was present at the same time the room was pressurized, it would be possible for some radioactive material to be released to the environment without being monitored.

In the highly unlikely occurrence of such an event, the majority of the release would be monitored since most of the air would be exhausted through the exhaust fans. Thus a large release would be detected and appropriate action initiated.

#### Description of Corrective Action

Two Engineering Change Notices (ECN's) have been prepared to remedy this deficiency. These ECN's will interlock each turbine room supply fan, in fast speed mode, with two turbine roof exhaust fans (roof ventilators). They will also interlock each turbine room supply fan, in slow speed mode, with one turbine roof exhaust fan. This interlock system will thus prevent someone from inadvertently pressurizing the turbine room.

#### Means Taken to Prevent a Recurrence

The interlock system mentioned above will remove the design deficiency and thus will eliminate the potential of inadvertent pressurization of the turbine room.