



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEQUOYAH NUCLEAR POWER PLANT, UNITS 1 AND 2
SAFETY EVALUATION REPORT FOR EMPLOYEE CONCERNS
ELEMENT REPORT EN 231.4 (B), "LACK OF FIRE DAMPER
IN ADDITIONAL DIESEL GENERATOR BUILDING"

1.0 INTRODUCTION

The problem defined by TVA is that fire dampers in the intake and exhaust grating openings in the number 5 diesel generator room leading to the fan rooms were deleted from the design by Field Change Request (FCR). A concern was expressed that the lack of these fire dampers could cause the spread of fire.

2.0 EVALUATION

Category: Engineering (23100)
Subcategory: Fire Protection Design (23104)
Element: Lack of fire Dampers in Additional Diesel Generator Building (231.4(B))
Employee Concern: IN-86-305-002

The basis for Element Report 231.4(B), Rev. 1, dated January 9, 1987, is Employee Concern IN-86-305-002 which states:

"There are no fire dampers in diesel generator building number 5 leading to the fan room. If a fire were to break out downstairs, the fans would pull the flames through the floor grating of the fan room."

This concern was evaluated by TVA as applicable to Sequoyah and Watts Bar Plants.

TVA's investigation of the concern compared the fire protection design of the building for the number 5 DG with that of the building for the original DG's numbers 1 through 4, and checked compliance of the fire protection barrier with the TVA General Design criteria and other codes and standards. The TVA review indicated that fire dampers are required in the floor gratings of DG sets numbers 1 through 4 for maintaining the gas concentration of the carbon dioxide (CO₂) fire suppression systems installed in the DG rooms. The number 5 DG room does not contain a CO₂ fire suppression system. An aqueous film forming foam (AFFF) fire suppression is installed. The equipment in the air intake and exhaust rooms above the number 5 DG room is considered an integral part of the

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DG set, therefore, fire barrier separation of these rooms from the number 5 DG room is not required.

The TVA evaluation did, however, indicate that discrepancies existed between TVA heating and ventilation (H&V) drawings and design criteria. For the number 5 diesel generator building, the H&V flow diagram indicated fire dampers were to be installed at the floor grating of the air intake and exhaust rooms. These were deleted by FCR 3532 on the H&V mechanical drawing. The TVA general Design Criteria requires a fire protection design that prevents fire spreading from peripheral rooms to the number 5 DG room.

The TVA evaluators concluded that the number 5 DG building is not required to be divided into fire zones, therefore, the concern is not valid.

However, the inconsistencies among drawings, design criteria and as-built conditions require corrective actions. TVA has developed a corrective action plan which will eliminate the discrepancies between various design documents related to the concern by deleting the fire protection requirements for the number 5 DG building environmental control system.

3.0 CONCLUSION

The NRC staff believes that the TVA investigation of the concern related to the lack of fire dampers in the number 5 DG room intake and exhaust gratings as described in Element Report 231.4(B) was adequate, except no evaluation was performed by TVA of why the FCR which deleted the number 5 DG fire dampers did not initiate timely revisions of the H&V drawings and design criteria. The corrective actions identified by the TVA Report may alleviate the specific discrepancies in the number 5 DG H&V drawings but the failure to control VCR's must also be addressed. During a March 31, 1987, telephone conversation between TVA (G. R. McNutt) and NRC Region II, (G. R. Wiseman and W. H. Miller), TVA agreed to revise Element Report 231.4(B) to address the problem of FCR control.

The discrepancies between TVA general design criteria and the actual design has been identified as an open item pending completion of TVA's evaluation of this problem and subsequent revision of report 231.4(B). Since the most significant issues of the TVA employee concerns have been addressed, this should no longer be considered a restart item.