



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

Docket

November 29, 1990

Docket Nos. 50-390
and 50-391

Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. Kingsley:

SUBJECT: SEISMIC QUALIFICATION OF CABLE TRAYS AND CONDUIT - WATTS BAR
NUCLEAR PLANT, UNITS 1 AND 2 (TAC R00516 AND 77325)

As a result of an audit at the Watts Bar Nuclear Plant site on November 5-9, 1990, we identified an open item concerning the seismic qualification of cable trays and conduit. Amendment 64 to the FSAR (Sections 3.10.3.2 and 3.10.3.3) provides a description of the seismic qualification of cable trays, conduit and their supports. The cable trays and conduit -- designated as Seismic Category 1(L) (limited structural integrity) -- are designed and constructed to preclude failure which could reduce the ability of Category 1 structure, systems, or components to perform their intended functions. There are no Seismic Category 1 cable trays and conduit at Watts Bar. However, the supports for safety-related cable trays and conduit in Category 1 structures are designated as Seismic Category 1.

For cable trays, TVA plans to use acceptance criteria which would allow the vertical bending moment to approach 80% of the ultimate capacity and a horizontal bending moment to approach a value corresponding to a ductility ratio of three. In addition, it appears that TVA plans to use seismic experience data, in part, to qualify the cable trays and conduit.

The staff, at this time, does not accept TVA's safety classification and seismic qualification of cable trays and conduit. Regulatory Guide 1.29, Position C.1.q clearly states that Class 1E electrical systems are to be designated as Seismic Category 1. "Systems" include the cable trays, conduit, supports, and switchgear, not just the cable. Furthermore, NRC Standard Review Plan (NUREG-0800 dated July 1981) Section 3.7.2 states that non-Category 1 structures will be analyzed and designed to prevent their failure under safe shutdown earthquake (SSE) conditions in a manner such that the margin of safety of these structures is equivalent to that of Category 1 structures. TVA's approach to classify its cable trays and conduit as Seismic Category 1(L) and to use less restrictive acceptance criteria and seismic experience data is considered an open item at this time, and will be tracked as such in the next supplement to the SER (SSER 6).

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Mr. Oliver D. Kingsley, Jr.

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We anticipate that the resolution of this open item will involve a lengthy process. This item was highlighted verbally during the audit exit meeting with your staff on November 9, 1990. We request you provide formal documentation on this issue and propose a timely resolution. We would be glad to discuss this further with your staff in a telephone conference or meeting, during which we would also discuss a target date for your response.

This review was performed by Messrs. D. Terao and T. Cheng.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than 10 respondents; therefore, OMB clearance is not required under Public Law 96-511.

Sincerely,

Original signed by

Peter S. Tam, Senior Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

cc: See next page

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