

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

January 11, 1980

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 3100  
101 Marietta Street  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN 79-14 - RII:JPO  
50-259, -260, -296 - BROWNS FERRY NUCLEAR PLANT

In response to a verbal request from NRC-Region II personnel regarding the use of deadweight supports in the original seismic analysis at the Browns Ferry Nuclear Plant, we are providing as an enclosure the requested verification. If you have any questions regarding this matter, please get in touch with Jim Domer at FTS 854-2014.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L. M. Mills*

L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

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ATLANTA, GEORGIA

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ENCLOSURE

BROWNS FERRY NUCLEAR PLANT REANALYSIS  
REACTOR CORE ISOLATION COOLING SYSTEM  
PUMP DISCHARGE TO EVALUATE DEADWEIGHT SUPPORTS  
SUPPLEMENTAL INFORMATION FOR OIE BULLETIN 79-14

A "worst case" sample problem was reanalyzed to answer the NRC's concerns. Because of the low vertical response spectra at Browns Ferry, the most critical condition for the Browns Ferry method of analysis would be a design with a long vertical run that could respond to horizontal accelerations and amplify around an elbow into a vertical response in a horizontal run of pipe. The reactor core isolation cooling system pump discharge line was chosen because it met these requirements and was long enough to be representative. In reviewing the original analysis of this problem and other problems, it was noted that the vertical deadweight hangers were included in the seismic analysis of the pipe but the seismic loads were not considered in the support design. The reanalysis was run for thermal, gravity, and seismic load cases after having the support types and locations verified by field personnel. The reanalysis showed that the pipe would uplift off some of the deadweight supports. In these locations, an impact factor of two was used when the seismic loads were added to the thermal and deadweight loads.

The deadweight hangers were originally sized based on deadweight allowables consistent with normal operating conditions. The reanalysis verified that the margins of safety inherent to the design of deadweight hangers were adequate to qualify the hangers for OBE and SSE conditions.

In summary the reanalysis of reactor core isolation cooling system pump discharge line using the latest analysis methods, showed all supports and piping to be fully qualified.

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