October 28, 1983

Docket Nos: 50-390
and 50-391

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

Subject: Compliance of the Watts Bar Nuclear Plant, Units 1 and 2, with GDC 51

DISTRIBUTION:
Docket Nos. 50-390/391
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In your August 22, 1983, letter, your staff identified +40°F as the lowest service metal temperature for the main feedwater isolation valve (MFIV) of the Watts Bar Nuclear Plant, Units 1 and 2, within the context of GDC 51, "Fracture Prevention of Containment Pressure Boundary." The material of interest is identified as SA 352 GR LCB, normalized and tempered.

GDC 51 requires that the reactor containment boundary shall be designed with sufficient margin to assure that under operating, maintenance, testing and postulated accident conditions, its ferritic materials behave in a nonbrittle manner.

On the basis of the data provided in your submittal, the staff is unable to conclude that sufficient margin will be available to assure that brittle fracture will not occur at 40°F. The staff's concern is based on NDT data which cite, for example, a T_{NDT} of +30°F (Q&T SA 216 GR WCB, WCC - Table NC-2311(a)1 - ASME Code Section III), and comparable data (Steel Castings Handbook, 5th Edition, Figure 15-14 and Figure 15-15) and NUREG-0577, October 1979. The staff's concern is also related to ambiguities in the relationship between Cv values and NDT.

Pending the development of additional confirmatory data for the material of interest, the staff concludes that the status of the Watts Bar SER related to GDC 51 compliance is unchanged. We request that TVA provide NDT data for the material of interest which will assure that sufficient margin of safety exists with respect to brittle fracture or that TVA identify alternatives which would be compensatory for the lack of demonstrated margin against brittle fracture.

Sincerely,

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

cc: See next page

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WATTS BAR

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