

December 30, 2004

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 1 — REQUEST FOR ADDITIONAL
INFORMATION FOR EXTENDED POWER UPRATE (TAC NO. MC3812)
(TS-431)

Dear Mr. Singer:

By letter dated 28, 2004, the Tennessee Valley Authority (TVA or the licensee), submitted to the U.S. Nuclear Regulatory Commission (NRC) an amendment request for Browns Ferry Nuclear Plant (BFN), Unit 1. The proposed amendment would change the BFN, Unit 1 operating license to increase the maximum authorized power level from 3293 to 3952 megawatt thermal (MWt). These changes represent an increase of approximately 20 percent above the current maximum authorized power level for Unit 1. The proposed amendment would also change the BFN licensing bases and associated Technical Specifications to credit 3 pounds per square inch gage (psig) for containment overpressure following a loss-of-coolant accident, and increase the reactor steam dome pressure by 30 psig.

The NRC staff has reviewed your submittal and finds that a response to the enclosed request for additional information is needed before we can complete the review. If you have any questions, please contact me at (301) 415-4041.

Sincerely,

/RA/

Margaret H. Chernoff, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-259

Enclosure: Request for Additional Information

cc w/encl: See next page

REQUEST FOR ADDITIONAL INFORMATION

EXTENDED POWER UPRATE (EPU)

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY PLANT, UNIT 1

DOCKET NO. 50-259

1. Explain why the reactor coolant pressure boundary (RCPB) piping materials are not affected by the power uprate.
2. Identify the materials of construction for the Reactor Recirculation System piping and discuss the effect of the requested extended power uprate (EPU) on the material. If other than type "A" (per NUREG 0313) materials exist, discuss any augmented inspection programs and discuss the adequacy of augmented inspection programs in light of the EPU.
3. Section XI of the American Society of Mechanical Engineers (ASME) Code allows flaws to be left in service after a proper evaluation of the flaws is performed in accordance with the ASME, Section XI rules. Indicate whether such flaws exist in the Reactor Recirculation System piping and evaluate the effect of the EPU on the flaws.
4. Discuss flaw mitigation steps that have been taken for the RCPB piping and discuss changes, if any, that will be made to the mitigation process as a result of the EPU.
5. The U.S. Nuclear Regulatory Commission (NRC) staff has determined that setpoint Allowable Values (AV) established by means of Instrumentation, Systems, and Automation Society document ISA 67.04 Part 2, Method 3 (Method 3) do not provide adequate assurance that a plant will operate in accordance with the assumptions upon which the plant safety analyses have been based. These concerns are summarized in the June 17, 2004, letter from Mr. Ledyard B. Marsh to Mr. Alex Marion, Nuclear Energy Institute, available on the public website under ADAMS Accession Number ML041690604. In this submittal, several setpoint AVs have been established using Method 3. Tennessee Valley Authority should describe the approach intended to ensure that at least 95 percent probability with at least 95 percent confidence that the associated action will be initiated with the process variable no less conservative than the initiation value assumed in the plant safety analyses. The approach presented should be detailed and should explicitly address how the approach provides adequate assurance that the safety analysis assumptions will not be violated.
6. Provide a detailed discussion on the impact of the EPU on the fire protection program and post-fire safe-shutdown analysis evaluation. General Electric report GE ELTR NEDC-33047P, Rev. 2 " in Enclosure 4 appears to be the only discussion of the fire protection program, fire suppression and detection systems in the submittal.

Enclosure

7. Discuss how the change in the fluence by EPU will affect the surveillance capsule withdrawal schedule (i.e., discuss whether there are any effect on the Boiling Water Reactor Vessel Internals Project, Integrated Surveillance Program, as applicable to Unit 1, because of this power uprate).
8. Discuss the effects of the EPU on the Upper Shelf Energy of the beltline components and the welds of the Unit 1 reactor pressure vessel.
9. Provide a discussion on any potential emergency action level changes that have been identified as a result of the proposed power uprate.
10. Provide a list specifically identifying all design bases changes, excluding Technical Specification changes, in the submittal requiring prior NRC approval.
11. In Enclosure 4, Section 7.4, a flow margin of 5 percent is established for the feedwater/condensate system. Discuss the basis for this criterion and how it compares with the pre-EPU margin. Discuss whether this is a change to the licensing basis, and how the flow margin and feedwater pump runout assumptions will be confirmed during startup testing.
12. Provide a description of the major differences in the Unit 1 operation; procedures; system configuration; and flow, pressure, and level setpoints as compared to those of Units 2 and 3.
13. In Enclosure 4, Section 4.2.5 addresses protective coatings. Discuss the effect of extended shutdown on qualified coatings, the measures taken, and the inspection results.

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(TS-431)

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SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 1 — REQUEST FOR ADDITIONAL
INFORMATION REGARDING EXTENDED POWER UPRATE (TAC NO.
MC3812)

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Mr. Karl W. Singer
Tennessee Valley Authority

BROWNS FERRY NUCLEAR PLANT

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