

May 16, 2003

Mr. Atambir S. Rao, ESBWR Project Manager
Nuclear Plant Projects
General Electric Company
175 Curtner Avenue, M/C 365
San Jose, CA 95125-1014

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 1 RELATED TO
ESBWR PRE-APPLICATION REVIEW (TAC NO. MB6801)

Dear Mr. Rao:

By letters dated August 30, 2002, November 19, 2002, and January 9, 2003, General Electric Company (GE) submitted eight topical reports for staff review in support of the ESBWR pre-application review. The Nuclear Regulatory Commission (NRC) staff is performing a detailed review of these topical reports to ensure that the information is sufficiently complete to enable the NRC staff to reach a conclusion on the acceptability of these reports.

The NRC staff has determined that additional information is necessary to continue the review. The enclosed requests for additional information (RAIs) regarding NEDC-33083P, "TRACG Application for ESBWR," were sent to you via electronic mail on February 19, March 10 and March 11, 2003, and were discussed with you and your staff on February 20 and March 27, 2003. Please provide the requested information by July 31, 2003, so that the review can be completed in a timely manner. Partial submittals would be welcomed to minimize delays.

Pursuant to 10 CFR 2.790, we have determined that the RAI provided as Enclosure 1 contains proprietary information. Proprietary information contained in Enclosure 1 is indicated by marginal lines. We have prepared a non-proprietary version of the RAI (Enclosure 2) that we have determined does not contain proprietary information. However, we will delay placing Enclosure 2 in the public document room for a period of ten (10) working days from the date of this letter to provide you with the opportunity to comment on the proprietary aspects only. If you believe that any information in Enclosure 2 is proprietary, please identify such information line by line and define the basis pursuant to the criteria of 10 CFR 2.790.

A. Rao

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If you have any questions or comments concerning this matter, please contact me at (301) 415-2875 or aec@nrc.gov.

Sincerely,

/RA/

Amy E. Cubbage, ESBWR Project Manager
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Project No. 717

Enclosure: 1. Request for Additional Information (Proprietary)
 2. Request for Additional Information (Non-Proprietary)

A. Rao

-2-

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Request for Additional Information
TRACG Application for ESBWR
ESBWR Pre-Application Review
General Electric Company

1. The ESBWR input deck for emergency core cooling system (ECCS)/loss-of-coolant accident (LOCA) analysis (Gdl-nl2.inp) defines the axial flow area fractions of all rings at level 23 []. Is this true? If it is, is it physical?

(In file "Gdl-nl2.inp," the following two lines were given:

***** FA-Z

VSSL000123FA-Z0 [] E)

2. Is the suppression pool spill over line explicitly modeled by both ECCS/LOCA and containment analysis TRACG models? If not, please provide an explanation.
3. Does radius distortion in the TRACG ECCS/LOCA model for the containment part affect the 3-D vessel numerical scheme and the overall containment response? (Both the stacked approach and large volume fraction and flow area fraction.) Please provide the explanations regarding the impact on the containment response.
4. It was indicated that decay heat table was used to define the core total power history during the gravity driven cooling system (GDCCS) line break LOCA. Is the initial full power operating condition and the subsequent scram considered in the decay heat table? If not, please explain.
5. It is assumed that the passive containment cooling system (PCCS) condensate accumulation tank has an initial void fraction of [].

(***** ALPN

VSSL000129ALPN0 [] E)

[]?

Please clarify. If not, what is the impact to the analysis results?

6. Is there a matrix of TRACG calculations (Design Record Files) to support TRACG validation, assessment for ESBWR application and ECCS/Transient analyses? If not, please provide a table which lists all the TRACG calculations within the scope of ESBWR pre-application.
7. Please explain the process of developing the ESBWR core model for three transient calculations documented in NEDC-33083P, "TRACG Application for ESBWR." More specifically, the core fuel loading pattern, burn-up distribution, control rod insertion pattern, etc.
8. Please provide the ESBWR specific GE-12 fuel bundle design data and F-type control rod data.
9. Please provide a large scale drawing of the ESBWR vessel and the vessel internals with major dimensions and elevations.
10. For the ECCS/LOCA model, how many PCCS units are lumped into one set of TRACG 1-D components? 3 or all 4 of them?
11. PIPE 42 and PIPE 43 are used to model GDCS air space to wetwell air space vents. However, they have identical volume and flow area. Why?
12. The input deck "Mslb-n.inp" has the following input card:

"VSSL000101DSTH0 []"

Is [] used to define the vessel wall thickness? If it is, is ESBWR reactor pressure vessel designed to have a thickness of []? Could you please clarify?

ESBWR

cc:

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