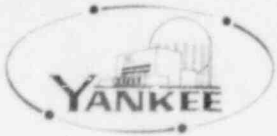


YANKEE ATOMIC ELECTRIC COMPANY



1671 Worcester Road, Framingham, Massachusetts 01701

2.C.2.1
FYR 83-9

January 14, 1983

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation
Mr. D. G. Eisenhut, Director
Division of Licensing

- References:
- (a) License No. DPR-3 (Docket No. 50-29)
 - (b) License No. DPR-28 (Docket No. 50-271)
 - (c) License No. DPR-36 (Docket No. 50-309)
 - (d) USNRC Letter to All Licensees, dated October 31, 1980 (NUREG-0737)
 - (e) USNRC Letter to All Licensees, dated August 9, 1982 (Generic Letter No. 82-14)

Subject: RELAP5YA Computer Program to Analyze BWR Full Break Spectrum and PWR Small Break Spectrum

Dear Sir:

Enclosed herein are ten (10) copies of RELAP5YA, a Computer Program for Light-Water Reactor System Thermal-Hydraulic Analysis. This program has been developed by Yankee Atomic Electric Company (YAEC) to facilitate improved Loss-of-Coolant Accident (LOCA) analyses. This program was conceived over three years ago, prior to the accident at TMI, as a result of YAEC's continuing commitment to support the safety and licensing analysis functions through improved LOCA analysis methods qualified against experimental data. Further, we recognized after the TMI-2 accident that the RELAP5YA code would also address Items II.K.3.30 and II.K.3.5 contained in NUREG-0737 [Reference (d)].

The RELAP5YA code was developed under YAEC's LOCA Methods Development Program. A major goal was to develop BWR LOCA analysis capability within YAEC to cover the entire break size and location spectra for LOCA events. A later goal was to improve the PWR small break analysis methods at YAEC to address technical concerns about these methods identified during critical reviews following the TMI-2 accident. The RELAP5YA code allows both best-estimate and evaluation model analysis to be performed. Pending NRC approval, YAEC will use this code as a major part of its methodology to analyze the entire BWR break spectrum and the PWR small break spectrum in a manner that conforms to requirements contained in 10CFR50.46 and Appendix K. The RELAP5YA code will

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also be used for more realistic analyses of LOCA events and other transients, as necessary.

The RELAP5YA code documentation consists of three volumes contained in two binders. Volume I and Appendices A through C provide a complete description of the code and are contained in the first binder (Part I). Volume II provides a Users Manual for the code, and Volume III contains an extensive assessment of RELAP5YA calculations compared against benchmark solutions, separate efforts, and integral test results. Volumes II and III comprise the second binder (PART II) of the RELAP5YA document. The assessment provided in Volume III establishes the viability of the RELAP5YA code to predict complex thermal-hydraulic phenomena encountered in hypothetical LOCA events and the appropriateness of this code for licensing analyses.

The RELAP5YA computer program will be used for the following licensing analyses:

- Utilize RELAP5YA to support LOCA analyses for BWR core reloads beginning July 1983.
- Provide capability to perform small break LOCA PWR core reload analyses for PWR core reloads, beginning in July 1983.
- Perform other safety and licensing analysis studies that may be required.
- Close out NUREG-0737 issues (Items: II.K.3.5, II.K.3.30, and II.K.3.31).

Since YAEC anticipates using the RELAP5YA computer program for LOCA related licensing analyses in July, 1983 to accommodate the spring 1984 reload submittals, we are requesting a timely review by the NRC. To support this review schedule, YAEC is now proceeding with the development of plant-specific data input decks to simulate the respective licensee plants. These input decks will be used for the following analyses:

- A sample calculation of a large break LOCA for Vermont Yankee (VY) to demonstrate applicability to a BWR.
- Application of RELAP5YA to Maine Yankee to resolve the pump trip issue associated with small break accidents.

Each analysis will be documented and submitted to the NRC in the spring of 1983 for review.

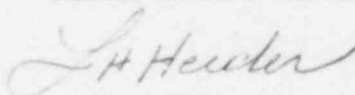
The documentation provided herein contains information considered proprietary to Yankee Atomic Electric Company. This documentation is submitted in confidence and is to be used solely for the purpose for which it is furnished. As such, this documentation is not to be reproduced, transmitted, disclosed, or used otherwise in whole or part without prior authorization of Yankee Atomic Electric Company, Nuclear Services Division. In accordance with 10CFR2.790(b)(1), an affidavit attesting to the proprietary nature of the information transmitted herein is attached.

RELAP5YA, a proprietary computer program (YAEC 1300P), represents over 1000 pages of computer output; therefore, we have elected to follow the options outlined in Reference (e), entitled "Alternatives for Submittals of Hard Copies". To facilitate expeditious review by members of your staff, we have furnished ten (10) hard copies with this letter. Under separate letters we will provide one master microfiche of the RELAP5YA proprietary computer program (YAEC 1300P).

We trust that you will find this information satisfactory; however, should you desire additional information, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY



L. H. Heider
Vice President/Manager of Operations

LHH/dd

AFFIDAVIT PURSUANT

TO 10CFR2.790

Yankee Atomic Electric Company)
Nuclear Services Division)
Commonwealth of Massachusetts)
Middlesex County)

SS.:

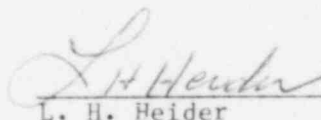
I, D. E. Vandenburg depose and say that I am the Vice President, of Yankee Atomic Electric Company, duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary. I am submitting this affidavit in conformance with the provisions of 10CFR2.790 of the Commission's regulations for withholding this information.

The information for which proprietary treatment is sought is contained in YAEC-1300P.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The material contained in this transmittal was obtained at considerable expense to Yankee Atomic Electric Company, and the release of which would seriously affect our competitive position.
2. The material contained in this transmittal is of the type customarily held in confidence and not customarily disclosed to the public.
3. This information is being transmitted to the Commission in confidence. Under the provisions of 10CFR2.790 with the understanding that it is to be received in confidence by the Commission.
4. This information is for Commission internal use only and should not be released to persons or organizations outside the Directorate of Regulation and the ACRS without prior approval of Yankee Atomic Electric Company. Should it become necessary to release this information to such persons as part of the review procedure, please contact Yankee Atomic Electric Company and they will make the necessary arrangements required to protect their proprietary interests.

Further the deponent sayeth not.

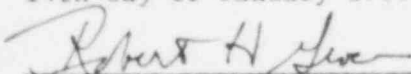


L. H. Heider

Vice President/Manager of Operations

LHH/dsm

Sworn to before me this
14th day of January 1983



Robert H. Groce, Notary Public

MY Commission Expires September 14, 1984

