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NYN-93020

February 2, 1993

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

Attention: Document Control Desk

References: (a) Facility Operating License No. NPF-86, Docket No. 50-43  
(b) TAC No. M85493  
(c) North Atlantic Letter, NYN-92162, dated November 25, 1992 "License Amendment Request 92-14; Incore Detector System", (TAC No. M85020), T.C. Feigenbaum to USNRC

Subject: Request for NRC Review and Approval of Analysis Methodologies to be Applied to Seabrook Station

Gentlemen:

North Atlantic Energy Service Corporation (North Atlantic) requests NRC review and approval of the enclosed topical reports which describe core reload analysis methodologies that North Atlantic proposes to use in support of future operation of Seabrook Station.

Enclosed are copies of three proprietary topical reports that have been prepared by Yankee Atomic Electric Company (YAEC) acting as agent for North Atlantic. Since the topical reports contain information which is considered proprietary to YAEC, an affidavit pursuant to 10CFR2.790 is also enclosed (Enclosure A).

YAEC-1849P, (Enclosure B), describes the extension of YAEC's NRC approved thermal-hydraulic subchannel analysis methodology for Pressurized Water Reactors (PWRs) to the VIPRE-01 computer code for application at Seabrook Station. YAEC has performed analyses to support core reloads for the Yankee Nuclear Power Station (YNPS) and the Maine Yankee Atomic Power Station (MYAPS) with approved applications of this methodology using the COBRA-IIIC computer code since the early 1970's.

YAEC-1854P, (Enclosure C), describes the extension of YAEC's NRC approved methodology for determining core thermal limit protection function setpoints for application at Seabrook Station. YAEC has utilized its current methodology to determine core thermal design limit protection function setpoints for MYAPS since the late 1970's.

YAEC-1856P, (Enclosure D), describes YAEC's extension of NRC approved RETRAN computer code applications for analysis of Seabrook Station systems to include the full range of non-LOCA events considered in Chapter 15 of the UFSAR. YAEC has performed safety analyses in support of both PWRs and Boiling Water Reactors (BWRs) using either the RETRAN or GEMINI-II computer codes since the early 1970's. These analyses have been

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reviewed and approved by the NRC and used in support of YNPS, MYAPS, Seabrook Station and Vermont Yankee. North Atlantic intends to have YAEC extend the range of its application of RETRAN for PWRs to additional non-LOCA transients, i.e., to the full range of transients for which the RETRAN computer code has received NRC approval.

The three topical reports provide comprehensive documentation of the methodologies previously employed by YAEC and Westinghouse for core reload analysis of PWRs. The methodologies also complement the advanced in-core power distribution measurement system at Seabrook Station [Reference (c)].

These methodologies will be applied by YAEC to its continuing support of PWRs, including Seabrook Station to improve operational flexibility, capacity factor, and cycle economics while maintaining or even increasing the current level of plant safety. These operational improvements will be achieved by applying these methodologies in two separate but linked phases.

In the first phase, the Wide Band Delta-I Program, the methodologies will be applied to permit optimum use of the core power distribution information continuously available from the fixed in-core detectors at Seabrook Station. A benefit in operational flexibility will be realized by using the continuous core power distribution information to relax the constraints currently imposed on axial flux difference (or Delta-I) in the Seabrook Station Technical Specifications. North Atlantic's goal is to begin wide-band Delta-I operation in Cycle 4. The Cycle 4 startup is currently scheduled for May 1994. The enclosed topical reports are submitted at this time to permit a timely NRC review and approval of the methodologies consistent with application in Cycle 4. Associated Technical Specification changes are scheduled to be submitted in October 1993.

In the second phase, the Fuel Procurement Program, the methodologies will be applied to achieve improved fuel cycle economics. This benefit will be realized through a relaxation in the constraints currently imposed on core power distribution peaking factors and moderator temperature coefficient in the Seabrook Station Technical Specifications. These relaxations will permit greater flexibility in future core designs using a fewer number of fresh fuel assemblies. The methodologies, combined with improved fuel design features permit this benefit while maintaining or even increasing the current level of plant safety. North Atlantic's goal is to obtain this benefit starting with Cycle 5, currently scheduled to begin in November 1995. Associated Technical Specification changes are scheduled to be submitted in October 1993 in order to support the Cycle 5 fuel procurement schedule of September 1, 1994.

The two phases are linked through the use of the analysis methodologies documented in the enclosed topical reports and through required changes to common sections of the Seabrook Station Technical Specifications. North Atlantic believes that significant benefit can be gained in a meeting during which North Atlantic can provide explanations of the topical reports, the Wide-Band Delta-I Program, the Fuel Procurement Program, their combined schedules and the proposed implementation strategy. North Atlantic requests such a meeting with the appropriate NRC technical staff in early 1993.

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Should you have any questions regarding this request, please contact Mr. Terry L. Harpster, Director of Licensing Services, at (603) 474-9521 extension 2765.

Very truly yours,

  
Ted C. Feigenbaum

TCF:MDO/act

Enclosures

cc: Mr. Thomas T. Martin (1 copy)  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Mr. Albert W. De Agazio, Senior Project Manager (6 copies)  
Project Directorate I-3  
Division of Reactor Projects  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Mr. Noel Dudley (1 copy)  
NRC Senior Resident Inspector  
P.O. Box 1149  
Seabrook NH 03874

North Atlantic  
February 2, 1993

ENCLOSURE A TO LYN-93920

Affidavit Pursuant To 10CFR2.790

AFFIDAVIT PURSUANT TO 10CFR2.790

YANKEE ATOMIC ELECTRIC COMPANY)  
NUCLEAR SERVICES DIVISION )  
COMMONWEALTH OF MASSACHUSETTS )  
WORCESTER COUNTY ) ss

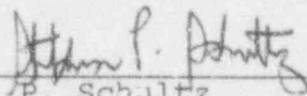
I, Stephen P. Schultz, depose and say that I am a Vice President of Yankee Atomic Electric Company, duly authorized to make this affidavit, and have reviewed or cause to have reviewed the information which is identified as proprietary. I am submitting this affidavit in conformance with the provisions of 10CFR2.790 of the Commission's regulations for withholding this information from public disclosure.

The information for which proprietary treatment is sought is contained in topical reports YAEC-1849P, YAEC-1854P, and YAEC-1856P dated November, 1992.

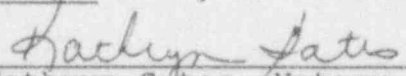
Pursuant to the provisions of Paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information in the above reports should be withheld from public disclosure:

1. The material contained in the topical reports was obtained at considerable expense to Yankee Atomic Electric Company and our sponsor companies, and the release of it would seriously affect our competitive position as a supplier of nuclear design analysis software and services.
2. The information contained in the topical reports 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 process, please contact Yankee Atomic Electric Company.

Further deponent sayeth not.

  
S. P. Schultz  
Vice President

Sworn to before me this  
26 th day of November, 1992

  
Kathryn Gates, Notary Public  
My Commission Expires 01/24/97