



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 27, 1999

Electric Power Research Institute
Attn: Mr. James F. Lang
Director, Power Production
3412 Hillview Avenue
P.O. Box 10412
Palo Alto, CA 94303-0813

info 501 C3 obtainable to everyone
Regulatory Improvement
Part 50 & option 3
Research Lead
Ashok Thadani
Possible

Dear Mr. Lang:

I am responding to your April 22, 1999, letter requesting a waiver of the fee for the review of the Electric Power Research Institute's, (EPRI), RETRAN-3D computer program. As explained below, I have determined that the review of the RETRAN-3D computer program does not meet the criteria for a waiver of the 10 CFR Part 170 fees.

The EPRI reactor safety analysis code, RETRAN-3D, was submitted on July 8, 1998, for NRC's review and approval. EPRI's bases for requesting a waiver of the review fee are three items: (1) NRC's review of this code falls under 10 CFR 170.21 J, Footnote 4, which provides that fees will not be assessed for requests/reports submitted to the NRC as a means of exchanging information between industry organizations and the NRC for the purpose of supporting generic regulatory improvements or efforts; (2) EPRI is a nonprofit organization that conducts collaborative R&D on behalf of the U.S.; (3) there is extensive historic precedent regarding fee waivers for NRC's review of EPRI documents. To assist us in our review, we requested information concerning the proprietary nature of the code. We received a July 7, 1999, letter from Mr. Gary Vine, Washington Representative for EPRI, clarifying that the code, although proprietary, would be available to the industry.

For the following reasons, I am denying your request for a waiver of the 10 CFR Part 170 fees. The EPRI submittal does not support generic regulatory improvements or efforts. The topical report describes a computer code that will certainly be used by many individual licensees and reactor vendors to support individual licensing actions. Although the code may be used on occasion to support generic effort by licensees to resolve issues, it is more likely to be used on an individual plant basis. Therefore, the RETRAN-3D computer program does not meet the criteria of Footnote 4, 10 CFR 170.21. While Mr. Vine's letter resolved the issue of the code's availability to the industry, the fact remained that the staff is not using this review for the purpose of supporting generic regulatory improvements. Further, the fact that EPRI is a nonprofit organization is not sufficient justification to grant a waiver of the fee. Part 170 fees are assessed to nonprofit organizations, except certain nonprofit educational institutions.

With regard to the NRC's historical review of EPRI documents without a fee, waivers of the fee requirements are granted or denied based on the facts in each case. For example, the EPRI reports on license renewal submitted by NEI were granted an exemption of the Part 170 fees because the staff supported the waiver request with the statements documented in the September 19, 1998, letter as follows:

The reports will support staff resolution of technical issues and the establishment of guidance that will be of generic benefit to license renewal applicants. Resolution of the issues addressed by the reports will aid in improving the NRC's license renewal implementation guidance and the stability and predictability of the regulatory process for license renewal. Results of the review will be considered for incorporation into the NRC's Standard Review Plan for License Renewal. The reports are available for use by all licensees and the public.

NRC staff began its review of the RETRAN-3D computer program in September 1998 and the review is ongoing. At this time, there are seven unpaid invoices as follows:

Invoice Number	Review Period	Invoice Date	Amt. Due	TAC Number
RL0078-99	6/21/98-9/26/98	11/7/98	\$2,480	MA2390
RL0335-99	9/27/98-1/2/99	2/16/99	\$23,436	MA2390
RL0378-99	1/3/99-3/27/99	4/26/99	\$10,168	MA2390
RL0384-99	1/3/99-3/27/99	4/26/99	\$18,154	MA4307
RL0385-99	1/3/99-3/27/99	4/26/99	\$9,424	MA4309
RL0386-99	1/3/99-3/27/99	4/26/99	\$24,316	MA4310
RL0388-99	1/3/99-3/27/99	4/26/99	\$5,022	MA4649

These invoices are due and payable. I will waive all late charges that have accrued on these invoices if payment is received within 30 days from the date of this letter. Otherwise, all late charges will be accrued from the date of the invoices.

If you have any questions about the invoices, contact Ellen Poteat at 301 415-6392.

Sincerely,

[Signature]

Jesse L. Funches
Chief Financial Officer

*1 pm
tele con
Ralph Caruso
office
10th floor
O.W.F.N*

cc: Mr. Gary Vine

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Distribution: Letter to James F. Lang, Dated

L. Tremper, OCFO/DAF/LFARB

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Invoice Files RL0078-99, RL0335-99, RL0378-99, RL0384-99,

RL0385-99, RL0386-99, RL0388-99

Project File 00669

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July 7, 1999

Ms. Glenda Jackson
Office of the Chief Financial Officer
Division of Accounting and Finance (M/S T-9-E10)
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville MD 20852

Dear Ms. Jackson:

Subject: PROJECT 669: Review of RETRAN-3D

Ref. EPRI letter dated April 22, 1999 to Jesse Funches, CFO, from Jim Lang, Director

Confirming our discussion on 1 July, the following additional information is provided in support of EPRI's request, in the letter referenced above, for NRC to waive the fee currently being charged to EPRI for its review of the RETRAN-3D computer program.

Our previous letter provided details regarding industry intended use of the code and access to that code by organizations outside the industry (e.g., government agencies, universities, etc.). The letter was not sufficiently clear on industry's access to the code.

Clearly, all industry organizations, as well as the public at large, have access to the extensive code documentation, which specifies all formulas, algorithms, input instructions and code architecture, because all this information has been placed in the NRC's Public Document Room (PDR).

In addition, the source code itself, although maintained proprietary for configuration control and other purposes, is made available to all U.S nuclear utility licensees. All but a couple nuclear utilities are members of EPRI and have free access to the source code. Non-member utilities have access to the source code on the basis of an additional charge they pay for EPRI products. The generic process for granting access to EPRI products by non-members was developed in coordination with NEI and agreed to by all utilities.

In addition, NRC, DOE, Naval Reactors, many universities, etc. have received royalty free licenses for use of the current version of the code (RETRAN-02). Most non-licensee code users are provided with the source code, under certain obligations such as restrictions on further dissemination for commercial purposes, commitments to configuration control and code maintenance, etc. The current exception to source code access is due to U.S. government export control restrictions. These practices should carry over generally to the new code.

WASHINGTON OFFICE

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CORPORATE HEADQUARTERS

3412 Hillview Avenue | Palo Alto CA 94304-1395 USA | 650.855.2000 | Customer Service 800.313.3774 | www.epri.com

Thank you for this opportunity to provide this additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Vine". The signature is written in a cursive style with a large initial "G".

Gary Vine
Sr. Washington Representative
EPRI

c: Jim Wilson, USNRC
Jim Lang, EPRI

Sharon
Assignment
to DAF

EPRI

April 22, 1999

Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: Jesse L. Funches (Chief Financial Officer)
Attention: James H. Wilson (Senior Project Manager, NRR)

Subject: PROJECT 669: Review of RETRAN-3D

I am writing to you to request that the NRC waive the fee currently being charged to EPRI for its review of the RETRAN-3D computer program.

As you know, EPRI is a non-profit research institute that conducts collaborative R&D on behalf of U.S. and international utilities. Our nuclear energy research and development programs primarily focus on industry-wide technical, safety and performance issues.

EPRI and NRC enjoy a close working relationship with each other in nuclear safety R&D – one which we at EPRI value and hope to maintain in the future. During its history EPRI, on behalf of the U. S. nuclear industry, has authored many technical reports and computer programs which have been submitted to NRC for information and review.

Given this background, an EPRI reactor safety analysis code, RETRAN-3D, was submitted to NRC on July 8, 1998 for review by Greg Swindlehurst of Duke Power Co., Chairman of EPRI's RETRAN Maintenance Group Steering Committee. RETRAN-3D is a thermal-hydraulic transient analysis code to be used by EPRI and the nuclear utility industry for a variety of generic safety analysis applications. In response, the NRC determined that the scope and detail of code documentation were sufficient for review and notified EPRI of NRC's acceptance of the code for review on December 4, 1998. The NRC review of the code is progressing well and has been supported by a number of meetings and briefings for NRC staff and the ACRS.

EPRI requests that NRC reconsider its position to charge EPRI review fees, estimated at about \$500K, for this review [reference: conference call on 11 January 1999 between NRC (James Wilson, Ralph Caruso), and EPRI (Lance Agee, Gary Vine, Greg Swindlehurst)].

EPRI's basis for this request, further discussed in attachments to this letter, is summarized by the following three points:

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1. NRC review of this code, per 10CFR 170.21, should fall under that article's footnote 4, which states that review fees will not be assessed for requests/reports submitted to the NRC under three specified conditions. The third listed condition is: "... as a means of exchanging information between industry organizations and the NRC for the purpose of supporting generic regulatory improvements or efforts." We believe our review request fully conforms to this condition. Please see Enclosure 1 for more details.
2. EPRI is a non-profit organization that conducts collaborative R&D on behalf of U.S. and a number of international utilities. Our nuclear R&D is focused primarily on generic technical, safety and performance issues and is coordinated closely with NEI and INPO because of the generic nature of our technical support to the industry.
3. Extensive historic precedent regarding NRC review of EPRI documents, including many recent examples summarized in Enclosure 2, show that NRC reviews of EPRI submittals have been on a generic funding basis, without charging additional review fees. NRC's prior precedent for accepting EPRI reports for generic review includes examples of both direct submittals by EPRI and submittals via NEI on behalf of the industry.

As discussed in Enclosure 1, this computer code expands the capabilities of the NRC-approved RETRAN-02, which is in wide use in the U.S. and internationally. We have high expectations for how RETRAN-3D will be used by industry. The July 8, 1998 letter submitting the code to NRC listed eighteen utilities who have already expressed support for obtaining NRC approval for RETRAN-3D because of their plans to use that code in individual licensing submittals to NRC. Further, the code will be used extensively by industry in relation to various generic improvements to current regulations, including analyses to address generic safety issues, analyses to reduce uncertainties in prior safety analyses and analyses in support of risk-informed, performance-based initiatives.

Thank you for your consideration of this request.

Sincerely,



James F. Lang
Director, Power Production

JFL/b9920031

Enclosures

- c: Roger Anderson, NSP, Ralph Caruso, NRR, Tim Collins, NRR
Ralph Landry, NRR, Greg Rueger, PG&E, Greg Swindlehurst, Duke Power

Enclosure 1:
Generic Applicability of RETRAN-3D to Regulatory Improvement

RETRAN-3D is a third generation system transient thermal-hydraulic code. Its predecessor, RETRAN-02, is used extensively by the nuclear industry for modeling a wide range of safety conditions and issues. It is the basis for many utility-specific licensing and safety analyses and for various industry generic safety analysis submittals to NRC. Specifically, 49 U.S. utilities and about 20 international organizations have used RETRAN-02 as reflected in published papers, NRC submittals, and EPRI RETRAN User group membership.

Some of the new models incorporated in RETRAN-3D include:

- Multi-dimensional neutron kinetics
- Non-equilibrium field equations
- Non-condensable gas flow
- Implicit numerical solution methods

In addition, many of the models in RETRAN-02 have been extended in RETRAN-3D to broaden and enhance the capabilities of the code. The new and extended models will enable users to better simulate plant and system transient response with enhanced accuracy and efficiency. Many regulatory and operational issues require analyses which are beyond the capabilities of the RETRAN-02 version. The required capabilities have been addressed in RETRAN-3D.

In addition to improving industry analytic capabilities for analyses involving multi-dimensional kinetics, mid-loop operations, and non-equilibrium phenomena, we expect RETRAN-3D to serve a crucial role in support of current R&D in areas such as high burnup fuels, BWR stability, shutdown cooling and other emerging safety and licensing issues. The code can be used for Chapter 15 safety analysis and various best-estimate analyses, for analyzing unanticipated plant events and for analyzing previously undefined safety scenarios. It can also be used to perform operational analysis and to validate training simulators. RETRAN-3D can be applied to all U.S. light water reactors. It has been used for RBMK analysis and is capable of analyzing the VVER reactors.

Eighteen utilities, representing over half of the nation's nuclear power plants, have expressed support for obtaining NRC review of RETRAN-3D. These utilities are listed in the July 8, 1998 letter. These utilities are already using RETRAN-3D and applications of RETRAN-3D have been submitted or are planned by some of these organizations to take advantage of the new models or as part of a transition to the newer generation code. We expect that the other U.S. utilities and many international utilities (especially prior RETRAN users) will migrate to RETRAN-3D once the NRC has issued an SER on the code.

Clearly, RETRAN-3D is a generic, multi-purpose code with broad industry applicability and will be used by virtually all U.S. plants. It will be used for both individual plant analyses and generic analyses of regulatory issues on behalf of the entire nuclear industry. Its applications in industry and its basis for submittal to NRC fully conform to the exception in NRC regulations for the imposition of review fees.

Enclosure 2:

Examples of Historic Precedent Regarding NRC Review Of EPRI Documents

1. The ALWR Utility Requirements Document was submitted for NRC review and approval over a ten year period from 1986 to 1995. This three-volume, multi-binder document set was under copyright, but was placed in the NRC's Public Document Room (PDR). The document was reviewed by NRC and received an SER. No review fees were charged.
2. The BWR Vessel and Internals Project has submitted an extensive set of reports to NRC for review this decade. The reports are related to the evaluation of crack growth in BWR nickel-based reactor pressure vessel internals. These generically applicable documents were submitted in accordance with the exception cited in 10CFR170.21 and were reviewed by NRC without charging review fees. Most of these documents are EPRI Proprietary.
3. Numerous reports related to digital instrumentation and controls have been submitted over the last five years in support of industry efforts to achieve NRC approval for replacing obsolescent analog controls with digital I&C systems in safety applications in nuclear plants. Recent examples of generically applicable documents reviewed by NRC, without fee, include:
 - Electromagnetic Interference Testing Guidelines
 - Evaluation & Acceptance of Commercially Available Digital Equipment Guidelines
 - Generic Functional and Qualification Requirements Specifications for PLCsThese generic I&C submittals include both proprietary and non-proprietary reports.

It is important to note that while NRC did not charge EPRI review fees for any of these generically applicable reports, it is now charging review fees for three related reports, developed by EPRI in cooperation with three commercial I&C vendors for the purpose of qualifying vendor-specific PLC products for commercial use. These are the ABB-CE Common Q system, the Siemens Teleperm XS system and the Triconex Tricon system. The nuclear utility advisors that oversee EPRI's R&D program typically limit EPRI's role to generic R&D that precedes and supports development of commercial products by for-profit companies. In this case, EPRI was asked to cost-share this commercial development activity with a number of qualified commercial vendors in order to expedite development and to better control the quality of development and submittals to NRC in accordance with the previously approved generic guidelines listed above. It is important to note that NRC recognized these distinctions in deciding that the generic EPRI documents should not be charged review fees but the EPRI-supported commercial development of vendor-specific products should be charged review fees.

4. EPRI has submitted reports in support of a methodology for conducting risk-informed in-service inspections (RI-ISI) at nuclear power plants. The basic EPRI report on the methodology was submitted via NEI for NRC review and approval and was placed in the PDR as non-proprietary. Supporting technical documentation (EPRI Proprietary) was provided to NRC. None of these documents were charged NRC review fees.

5. Many other EPRI reports have been submitted via NEI for NRC review, assisting industry exchange of information with NRC for the purpose of supporting generic regulatory improvements.

Enclosure 3:
Additional Facts Regarding RETRAN-3D Development and Access

1. RETRAN-3D development was co-funded by EPRI, member utilities and various international organizations under joint co-funding research agreements. EPRI retained the ownership of the intellectual property and the co-funders received a license to use the code in their home country.
2. The fee charged to the RETRAN user group members is a cost recovery formula for maintenance of the Safety Grade Software. All RETRAN licensees are eligible for membership in this group.
3. EPRI routinely grants educational institutes royalty-free licenses to use RETRAN and other EPRI codes for educational purposes. Approximately 20 such educational use licenses are in place for RETRAN.
4. The RETRAN-3D code documents, which specify all formulas, algorithms, input instructions and the computer architecture of the code, have been put in the NRC's PDR. The source code is EPRI proprietary but ample precedent (e.g., RI-ISI methodology) exists for NRC review without fee imposition, including in situations like this where the essential documentation is placed in the PDR but supporting technical documentation (e.g., source code) is submitted and reviewed as proprietary.
5. The US NRC, DOE and DOD (Navy) have received royalty free licenses to use the RETRAN-02 code, RETRAN-3D's predecessor. Currently no request has been received by EPRI for the use of RETRAN-3D by any U.S. government agencies but similar arrangements will be made for RETRAN-3D upon request.