



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 25, 1999

MEMORANDUM TO: Document Processing Services Section  
Records Management Branch  
Information Management Division  
Office of the Chief Information Officer

FROM:

James W. Shapaker *JWS*  
Events Assessment, Generic Communications and  
Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

SUBJECT:

DOCUMENTS ASSOCIATED WITH NRC GENERIC LETTER 83-11,  
SUPPLEMENT 1, LICENSEE QUALIFICATION FOR PERFORMING  
SAFETY ANALYSES (TAG NO. MA4540)

The Reactor Systems Branch (SRXB) in the Division of Systems Safety and Analysis prepared the subject generic letter, which was issued on June 24, 1999, and given accession number 9906210103. There is material related to the subject generic letter that should be placed in the NRC Public Document Room and made available to the public. Therefore, by copy of this memorandum, I am providing the following documents to the NRC Public Document Room: (1) a copy of the published version of the subject generic letter, (2) a copy of the information paper (SECY-99-149) that was sent to the Commission, (3) a copy of each letter received in response to the notice of opportunity for public comment on the proposed generic letter that was published in the *Federal Register* on October 25, 1995, and (4) a copy of the staff's resolution of public comments.

I request that you provide me with the Nuclear Documents System accession number for this memorandum. This information may be provided by telephone (415-1151) or by e-mail (JWS). In addition, please modify the appropriate NUDOCS entries to reflect the fact that the documents identified herein are related to Generic Letter 83-11, Supplement 1.

Attachments:  
As stated

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updated on 6/29

ID # R-5 Info./GL

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, DC 20555-0001

June 24, 1999

NRC GENERIC LETTER 83-11, SUPPLEMENT 1: LICENSEE QUALIFICATION FOR  
PERFORMING SAFETY ANALYSES

Addressees

All holders of operating licenses for nuclear power plants, including those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this supplement to Generic Letter (GL) 83-11 to notify licensees and applicants of modifications to the Office of Nuclear Reactor Regulation (NRR) practice regarding licensee qualification for performing their own safety analyses. This includes the analytical areas of reload physics design, core thermal-hydraulic analysis, fuel mechanical analysis, transient analysis (non-LOCA), dose analysis, setpoint analysis, containment response analysis, criticality analysis, statistical analysis, and Core Operating Limit Report (COLR) parameter generation. It is expected that recipients will review the information for applicability to their facilities. However, suggestions contained in this supplement to the generic letter are not NRC requirements; therefore, no specific action or written response is required.

Background

Over the past decade, substantially more licensees have been electing to perform their own safety analyses to support such tasks as reload applications and technical specification amendments, rather than to contract the work out to their nuclear steam supply system (NSSS) vendor, fuel vendor, or some other organization. The NRC encourages utilities to perform their own safety analyses, since doing this significantly improves licensee understanding of plant behavior. GL 83-11 presented guidance on the information that NRC needs in order to qualify licensees to perform their own safety analyses using approved computer codes.

Description of Circumstances

NRC's experience with safety analyses using large, complex computer codes has shown that errors or discrepancies discovered in safety analyses are more likely to be traced to the user rather than to the code itself. This realization has led the NRC to place additional emphasis on

assuring the capabilities of the code users as well as on assuring the codes themselves. In the past, NRC obtained this assurance by reviewing the code verification information submitted by the licensee. The reviews focused primarily on the licensee's quality assurance practices and the technical competence of the licensee with respect to their ability to set up an input deck, execute a code, and properly interpret the results. The information which was reviewed generally included comparisons (performed by the user of the code results) with experimental data, plant operational data, or other benchmarked analyses, as well as compliance with any restrictions or limitations stated in the generic NRC Safety Evaluation Report (SER) that approved the code.

Since GL 83-11 was issued, many licensees have submitted information in the form of topical reports demonstrating their ability to perform their own safety analyses, such as reload analyses using NRC-approved methods and codes. Preparation and review of a qualification topical report is resource intensive on the part of the staff and the licensee, and because the review is usually assigned a low priority, it is difficult to schedule the review for timely completion.

#### Discussion

To help shorten the lengthy review and approval process, the NRC has adopted a generic set of guidelines which, if met, would eliminate the need to submit detailed topical reports for NRC review before a licensee could use approved codes and methods. These guidelines are presented in the Attachment to this Generic Letter. Using this approach, which is consistent with the regulatory basis provided by Criteria II and III of Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50), the licensee would institute a program (such as training, procedures, and benchmarking) that follows the guidelines, and would notify NRC by letter that it has done this and that the documentation is available for NRC audit.

#### Summary

The revised guidance on licensee qualification for using safety analysis codes is intended for licensees who wish to perform their own licensing analyses using methods that have been reviewed and approved by the NRC, or that have otherwise been accepted as part of a plant's licensing basis.

#### Backfit Discussion

This supplement does not involve a backfit as defined in 10 CFR 50.109(a)(1), since it does nothing more than offer guidance as to an acceptable means by which a licensee may verify to the NRC its qualifications to use approved codes and methods for performing safety analyses. Therefore, the staff has not prepared a backfit analysis.

Federal Register Notification

A notice of opportunity for public comment was published in the *Federal Register* (60 FR 54712) on October 25, 1995. Comments were received from 13 licensees, 3 fuel vendors, and 3 industry interest groups. Copies of the comment letters received and the staff's evaluation of these comments are available in the NRC Public Document Room. Because of concurrent issues that arose at the Maine Yankee nuclear power reactor facility regarding the improper application of approved methods, the NRC decided to withdraw the issuance of the supplement to GL 83-11 pending a complete review of these issues. Subsequent review of the lessons learned from Maine Yankee indicated that the issues involved were adequately addressed in the GL 83-11 supplement as published for public comment. Therefore, the NRC decided to proceed with the issuance of the supplement.

In addition to the proposed supplement to GL 83-11, the staff also requested comments on modified procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. These comments will be addressed in a future staff action.

Paperwork Reduction Act Statement

This generic letter contains a voluntary collection that is subject to the Paperwork Reduction Act of 1995 (22 U.S.C. 3501 et seq.). This information collection was approved by the Office of Management and Budget, approval number 3150-0011, through September 30, 2000.

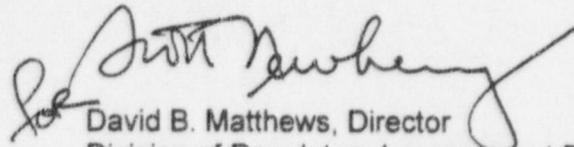
The public reporting burden for this collection of information is estimated to average 100 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The NRC is seeking public comment on the potential impact of the collection of information contained in the generic letter and on the following issues:

- (1) Is the proposed collection of information necessary for the proper performance of the functions of the NRC, including consideration of whether the information will have practical utility?
- (2) Is the estimate of burden accurate?
- (3) Is there a way to enhance the quality, utility, and clarity of the information to be collected?
- (4) How can the burden of the collection of information be minimized, including consideration of the use of automated collection techniques?

Send comments on any aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch, T-6 F33, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0011), Office of Management and Budget, Washington, D.C. 20503.

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

This generic letter requires no specific action or written response. If you have any questions about this matter, please contact the technical contact or the lead project manager listed below.



David B. Matthews, Director  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

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Lead project manager: Steven Bloom, NRR  
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Attachments:

1. Guidelines for Qualifying Licensees to Use Generically Approved Analysis Methods
2. List of Recently Issued NRC Generic Letters

GUIDELINES FOR QUALIFYING LICENSEES TO USE  
GENERALLY APPROVED ANALYSIS METHODS

## 1.0 INTRODUCTION

This attachment presents a simplified approach for qualifying licensees to use NRC-approved analysis methods. Typically, these methods are developed by fuel vendors, utilities, national laboratories, or organizations such as the Electric Power Research Institute, Incorporated, (EPRI). To use these approved methods, the licensee would institute a program (e.g., training, procedures) that follows the guidelines below and notify the NRC that it has done so.

The words "code" and "method" are used interchangeably within this document, i.e., a computer program. In many cases, however, an approved method may refer not only to a set of codes, an algorithm within a code, a means of analysis, a measurement technique, a statistical technique, etc., but also to selected input parameters which were specified in the methodology to ensure conservative results. In some cases, due to limitations or lack of appropriate data in the model, the code or method may be limited to certain applications. In these cases, the NRC safety evaluation report (SER) specifies the applicability of the methodology.

## 2.0 GUIDELINES

A commitment on the part of a licensee to implement the guidelines delineated in this document is sufficient information for the NRC to accept the licensee's qualification to use an approved code or method to perform safety-related evaluations such as reload physics design, core thermal-hydraulic analysis, fuel mechanical analysis, non-LOCA transient analysis, dose analysis, setpoint analysis, containment response analysis, criticality analysis, statistical analysis, and Core Operating Limit Report (COLR) parameter generation. To document its qualification in this manner, the licensee should send the NRC a notification of its having followed the guidelines at least 3 months before the date of its intended first licensing application.

### 2.1 Eligibility

The only codes and methods that are addressed by this process are those that NRC has reviewed and approved generically, or those that have been otherwise accepted as part of a plant's licensing basis. The use of a new methodology or a change to an existing methodology is not applicable to this process.

### 2.2 Application Procedures

In-house application procedures, which ensure that the use of approved methods is consistent with the code qualification and, in most instances, with the approved application of the methodology, should be established and implemented. Because of the bounding nature of

restrictions, including any defined in the licensing topical report, correspondence with the NRC, and the SER. The applicability of a particular method to either a specific fuel design or to a core which contains a mixture of fuel types is important. For example, the use of one vendor's hot channel analysis code with a different vendor's transient codes may not necessarily yield conservative results and, in fact, may not be consistent with the NRC-approved reload analysis package. Therefore, in-house application procedures should have the proper controls to preclude such a misapplication but should also include the flexibility to allow comparison tests between the different methodologies to show that a conservative assessment can be made.

### 2.3 Training and Qualification of Licensee Personnel

A training program should be established and implemented to ensure that each qualified user of an approved methodology has a good working knowledge of the codes and methods, and will be able to set up the input, to understand and interpret the output results, to understand the applications and limitations of the code, and to perform analyses in compliance with the application procedure. Training should be provided by either the developer of the code or method, or someone who has been previously qualified in the use of the code or method.

### 2.4 Comparison Calculations

Licensees should verify their ability to use the methods by comparing their calculated results to an appropriate set of benchmark data, such as physics startup tests, measured flux detector data during an operating cycle, higher order codes, published numerical benchmarks, analyses of record, etc. These comparisons should be documented in a report which is part of the licensee's quality assurance (QA) records. Significant, unexpected, or unusual deviations in the calculations of safety-related parameters should be justified in the report. All comparisons with startup test data should agree within the acceptance criteria defined in the plant startup test plan.

### 2.5 Quality Assurance and Change Control

All safety-related licensing calculations performed by a licensee using NRC-approved codes and methods should be conducted under the control of a QA program which complies with the requirements of Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50). The licensee's QA program should also include the following:

- (1) a provision for evaluating vendor (or other code developer) updates and implementing those updates, if applicable, in codes, methods, and procedures; and
- (2) a provision for informing vendors (or code developers) of any problems or errors discovered while using their codes, methods, or procedures.

LIST OF RECENTLY ISSUED GENERIC LETTERS

<u>GENERIC LETTER</u>	<u>SUBJECT</u>	<u>DATE OF ISSUANCE</u>	<u>ISSUED TO</u>
99-02	Laboratory Testing of Nuclear-Grade Activated Charcoal	6/3/99	All holders of operating Licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
99-01	Recent Nuclear Material Safety and Safeguards Decision on Bundling Exempt Quantities	5/3/99	All materials licensees.
98-01, Supp. 1	Year 2000 Readiness of Computer Systems at Nuclear Power Plants	1/11/99	All holders of operating licenses for nuclear power Plants, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
98-05	Boiling Water Reactor Licensees Use of the BWRVIP-05 Report To Request Relief From Augmented Examination Requirements on Reactor Pressure Vessel Circumferential Shell Welds	11/10/98	All holders of operating licenses (or construction permits) for BWRs, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.
98-04	Potential for Degradation of the Emergency Core Cooling System And the Containment Spray System After a Loss-of-Coolant Accident Because of Construction and Protective Coating Deficiencies and Foreign Material in Containment	07/14/98	All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

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OP = Operating License  
 CP = Construction Permit  
 NPR = Nuclear Power Reactors

June 4, 1999

SECY-99-149

FOR: The Commissioners

FROM: William D. Travers  
Executive Director for Operations

SUBJECT: PROPOSED NRC GENERIC LETTER 83-11, SUPPLEMENT 1,  
"LICENSEE QUALIFICATION FOR PERFORMING SAFETY  
ANALYSES"

PURPOSE:

To inform the Commission of the staff's intent to issue the subject generic letter supplement. The generic letter supplement notifies licensees and applicants of changes in the process by which the Office of Nuclear Reactor Regulation (NRR) qualifies licensees to perform their own safety analyses. A copy of the proposed generic letter supplement is attached (Attachment 1).

DISCUSSION:

On February 8, 1983, NRC issued Generic Letter (GL) 83-11, "Licensee Qualification for Performing Safety Analyses in Support of Licensing Actions." The generic letter presented guidance on the information that NRC needs to qualify licensees to perform their own safety analyses using approved computer codes.

The NRC encourages utilities to perform their own safety analyses, since such performance significantly improves licensee understanding of plant behavior. However, NRC's experience with licensee use of safety analyses involving large, complex computer codes shows that errors or discrepancies discovered in safety analyses are more likely to be traced back to the user rather than to the code itself. This realization has led the NRC to emphasize assuring the capabilities of the code users as well as the validity of the codes themselves. In the past, NRC has obtained this assurance by reviewing the code verification information submitted by the licensee. The NRC focused its reviews primarily on the licensee's quality assurance practices and the licensee's technical competence in setting up an input deck, executing a code, and interpreting the results. The information that was reviewed generally included comparisons

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(performed by the user of the code results) with experimental data, plant operational data, or other benchmarked analyses, as well as evidence of compliance with any restrictions or limitations stated in the generic NRC safety evaluation report (SER) that approved the code.

Since GL 83-11 was issued, many licensees have submitted information in the form of topical reports demonstrating their ability to perform their own safety analyses, such as reload analyses using NRC-approved methods and codes. Preparing and reviewing a qualification topical report can be resource intensive for both the licensee and the staff, and the reviews, usually having a low priority, are difficult to schedule for timely completion.

To help shorten the lengthy review and approval process, the NRC has adopted a generic set of guidelines which, if met, would eliminate the need to submit detailed topical reports for NRC review before a licensee could use approved codes and methods. These guidelines are presented in the attachment. Using this approach, which is consistent with the regulatory basis provided by Criteria II and III of Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50), the licensee would institute a program (such as training, procedures, and benchmarking) that follows the guidelines, and would notify NRC by letter that it has done this and that the documentation is available for NRC audit. The staff will incorporate oversight of this GL supplement into the NRC inspection program.

The revised guidance on licensee qualification for using safety analysis codes is intended for licensees who wish to perform their own licensing analyses using methods that have been reviewed and approved by the NRC, or that have otherwise been accepted as part of a plant's licensing basis.

This supplement does not involve a backfit as defined in 10 CFR 50.109(a)(1), since it only offers guidance on how a licensee may verify to the NRC its qualifications to use approved codes and methods for performing safety analyses. Therefore, the staff has not prepared a backfit analysis.

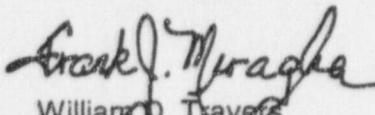
A notice of opportunity for public comment was published on October 25, 1995, in the *Federal Register* (60 FR 54712). Comments were received from 13 licensees, 3 fuel vendors, and 3 industry interest groups. Copies of the comment letters received, as well as the staff's evaluation of these comments (see Attachment 2), will be made available in the NRC Public Document Room. Because of concurrent issues that arose at the Maine Yankee nuclear power reactor facility regarding the improper application of approved methods, the NRC decided to withdraw the issuance of the supplement to GL 83-11 pending a complete review of these issues. The specific issue that arose concerned the licensee's failure to comply with some of the restrictions and conditions stated in the staff's SER for proper application of a loss-of-coolant-accident (LOCA) code. Subsequent review of the lessons learned from Maine Yankee has indicated that the issue involved was adequately addressed in the GL 83-11 supplement as published for public comment since the supplement requires that licensees adhere to all limitations and restrictions defined in the staff's SER. Further, this supplement to GL 83-11 does not apply to LOCA codes. Therefore, the NRC has decided to issue the supplement. In addition to the proposed supplement to GL 83-11, the staff also requested comments on modified

procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. These comments will be addressed in a future action.

The proposed generic letter does not involve a backfit and does not constitute a significant relaxation of safety and thus the Committee To Review Generic Requirements decided it did not warrant its review.

The Office of the General Counsel reviewed this generic letter supplement and has no legal objection to it.

The staff intends to issue this generic letter supplement approximately 5 working days after the date of this information paper.

  
William D. Travers  
Executive Director  
for Operations

Attachments:

1. Proposed Generic Letter 83-11, Supplement 1, "Licensee Qualification for Performing Safety Analyses"
2. NRC Staff Resolution of Public Comments

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## NRC STAFF RESOLUTION OF PUBLIC COMMENTS

Comments were received from 13 licensees, 3 fuel vendors, and 3 industry interest groups. Following are the staff responses to the comments received on the proposed GL 83-11 supplement:

### St. J. & L. of America, Inc.

Comment: Clarify that "safety analysis" includes the physics parameters and codes used to generate them.

Response: Clarification has been made in both the Purpose section and 2.0 Guidelines section.

Comment: For physics codes, approval of code should be separate from the application method.

Response: Section 2.2 has been modified to clarify that in some instances the approval of the code is separate from the application method.

Comment: Clarification of what constitutes NRC approval of a code and/or method would be helpful.

Response: Section 2.1 has been modified to clarify the eligibility of codes and methods for this process.

Comment: Clarify what constitutes a significant code and/or methodology update that must be reviewed by the NRC.

Response: What constitutes a significant code or methodology update that must be reviewed by the NRC is too complex a topic to fully address in a generic manner at this time. However, as mentioned in the *Federal Register* notice (October 25, 1995 (60 FR 54712)), the NRC is also investigating modified procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. Therefore, it is anticipated that this topic will be addressed at a future date.

### Westinghouse Electric Corporation

Comment: Reemphasize that NRC's experience has shown that a large percentage of all errors or discrepancies discovered in safety analyses can be traced to the user rather than the code itself.

Response: The fact that NRC's experience has shown that many times errors or discrepancies discovered in safety analyses can be traced to the user rather than the code itself is stated in the Description of Circumstances section.

Florida Power & Light Company

Comment: NRC should allow licensees to modify the Core Operating Limit Report (COLR) without specific NRC review so long as the methods and codes have already been approved by the NRC.

Response: The issuance of this supplement would allow this modification as long as the approved methodology is referenced in the technical specifications. The Introduction and Section 2.0 have been modified to address this.

Duke Power Company

Comment: NRC should generically lift restrictions included in topical report SERs that restricted application of the methodology to the plants operated or supported by the licensee of the methodology.

Response: The issuance of this supplement would generically lift these restrictions. However, any other limitations stated in the SERs should be adhered to.

Comment: The introduction should state that the codes are developed by vendors, utilities, national labs, or organizations like EPRI.

Response: The proposed statement has been added to the Introduction.

Comment: The scope of safety analyses should be defined to cover any analytical areas including reload physics design, core thermal-hydraulics, fuel mechanical analysis, transient analysis, dose analysis, setpoint analysis, containment analysis, criticality analysis, statistical methods, and any other analytical area for which topical reports have been approved by the NRC.

Response: The suggested clarification has been incorporated in the Purpose and 2.0 Guidelines sections, with the exception of LOCA analysis codes.

Nuclear Energy Institute

Comment: Recommends deletion of last two items in Section 2.5.

Response: The NRC believes that the two items emphasized are of sufficient significance to be explicitly stated.

Comment: Recommends rewording of Section 2.4 so as not to imply all of the suggested set of benchmark data is required.

Response: The wording in Section 2.4 has been modified to clarify that these are examples of appropriate benchmark data and are not all required.

Commonwealth Edison Company

Comment: Terminology and criteria are open to interpretation. For example, in Section 2.4, what the licensee may think is appropriate justification for an observed deviation in comparison calculations may satisfy one reviewer but not another.

Response: Suggested rewording for benchmark deviations has been added to Section 2.4 to eliminate ambiguity.

Comment: The intent of the term "application procedure" in Section 2.2 could be misinterpreted.

Response: Section 2.2 has been revised for clarification.

Comment: Section 2.4 should be revised to read "Significant, unexpected, or unusual deviations should be..."

Response: The suggested rewording has been added to Section 2.4.

Comment: Vendor update implementation in Section 2.5 should be clarified so as not to imply that all changes that a vendor makes must be implemented.

Response: Section 2.5 Item (1) has been modified to allow an evaluation of updates to determine if implementation is required.

#### Electric Power Research Institute

Comment: Questions whether a licensee must base the methodology on a previously approved plant SER or can develop a "new" topical based only on the generic code SER?

Response: By adhering to the guidelines in the supplement, a licensee can perform its own analyses using any approved code or method.

Comment: For clarity, the words "application of the" should be deleted from Section 2.2.

Response: The in-house application procedures should be consistent with the code qualification and approved application of the methodology. Therefore, this has been retained in Section 2.2.

Comment: Training should be performed by either the developer or someone who has been previously qualified.

Response: The proposed wording has been added to Section 2.3.

Comment: "Vendor" analysis should be changed to "analysis of record."

Response: The proposed rewording has been added to Section 2.4.

Comment: An appropriate set of benchmark data should include analysis of events, using higher order codes or published numerical benchmarks.

Response: The proposed wording has been added to Section 2.4.

Comment: In Section 2.4, "Any deviations" should be explained.

Response: A revision has been made to Section 2.4 to more clearly define deviations that must be explained.

#### Southern Nuclear Operating Company

Concurs with NEI comments.

GPU Nuclear Corporation

Comment: It seems appropriate to identify existing codes and methodologies that have been developed by national labs for the NRC that can be considered NRC approved codes and methods.

Response: The identification of existing codes and methodologies developed by national labs that can be considered as NRC approved codes and methods, even though formal NRC review and approval has never been performed, is beyond the scope of this proposed supplement.

Comment: Suggests that the terms "codes", "methods", and "applications" be clearly defined.

Response: A definition of codes, methods, and applications has been added to the Introduction.

Siemens Power Corporation

Supports the approaches described in the proposed supplement.

Virginia Power

Endorses the proposed supplement.

Pacific Gas and Electric Company

Comment: Concept should not be limited to core analysis.

Response: The specific analytical areas that the GL refers to have been added to the Purpose Section.

Comment: NRC should allow the training requirement to be met by on-the-job training.

Response: A new user can be qualified by on-the-job training as well as by formal classroom instruction. In many cases, user qualification will be accomplished by a combination of both

Yankee Atomic Electric Company (YAEC)

Comment: It is YAEC's understanding that the supplement will only apply to licensees who use another organization's methods and codes, and not to an organization that receives approval for its own codes and methods, and conducts safety analyses using those codes and methods.

Response: YAEC's interpretation is correct.

Comment: Recommends that the supplement also note that other organizations such as utilities and engineering service companies have developed codes and methods.

Response: The example of possible code developers has been modified to include utilities and national labs.

Indiana Michigan Power Company

Comment: Suggests that different versions of previously approved codes should be applicable as long as the calculational methodology is not changed.

Response: Section 2.1 has been modified to clarify code eligibility. What constitutes a significant code or methodology update that must be reviewed by the NRC is too complex a topic to fully address in generic terms at this time. However, as mentioned in the *Federal Register* notice (October 25, 1995 (60 FR 54712)), the NRC is also investigating modified procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. Therefore, it is anticipated that this topic will be addressed at a future date.

Entergy Operations, Incorporated

Comment: The applicability of a particular method to either a specific fuel design or to a core which contains a mixture of fuel types is important. Use of one vendor's hot channel analysis code with another's transient codes may not necessarily yield conservative results and may not be consistent with the NRC-approved reload analysis package. In-house application procedures should have proper controls to preclude such a misapplication, and should be permitted to include the flexibility to perform comparison tests between the different methodologies to show that a conservative assessment can be made.

Response: Section 2.2 has been modified to incorporate this application procedure.

Comment: NRC should consider issuing an inspection procedure concurrently with the supplement so that licensees would know what questions and documentation requests might be needed to support audits.

Response: The NRC will incorporate oversight of this GL supplement into the NRC inspection program following the issuance of this supplement.

Comment: NRC should consider providing licensees the flexibility to conduct their own assessment of a third party reviewer similar to what is currently allowed in NRC Inspection Module 40501.

Response: Issuance of this supplement would eliminate the need to submit a qualification topical report for NRC review and thus eliminate the need for a third party reviewer.

Arizona Public Service (APS)

Comment: The "first licensing application" is interpreted by APS as being the first proposed license amendment or other licensing basis change requiring prior NRC review and approval that was supported by safety analyses performed by the licensee instead of a vendor.

Response: The "first licensing application" may not necessarily be a licensing basis change requiring NRC approval before implementation, but may be a revision to a COLR parameter, for example.

Comment: APS would interpret "eligibility" in Section 2.1 to mean that code packages previously approved in topical reports or license amendments for other plants would be generically approved.

Response: The only codes and methods that are eligible for this process are those that have been generically approved, or those that have been otherwise accepted as part of a plant's licensing basis. Section 2.1 has been modified to clarify this.

Comment: APS suggests that plant specific uncertainties could be used without additional NRC review, even if these uncertainties are less than the generically approved uncertainties.

Response: As a general rule, plant specific uncertainties may be used without additional NRC review provided that they are derived with previously approved methods. However, NRC review is required for modifications to uncertainties that were generically approved to cover uncertainties due to codes and methods, correlations, etc.

Comment: APS states that they would control changes to methodology by design control procedures and that the changes would be subject to 10 CFR 50.59 evaluations, if appropriate.

Response: As stated in Section 2.1, the use of a new methodology or a change to an existing methodology is not applicable to this process. However, as mentioned in the *Federal Register* notice (October 25, 1995 (60 FR 54712)), the NRC is also investigating modified procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. Therefore, it is anticipated that this topic will be addressed at a future date.

Comment: APS considers an appropriate set of benchmark data to include other acknowledged industry standard data or criteria.

Response: The examples of appropriate benchmark data has been expanded to include APS's suggestions.

Comment: APS suggests that Section 2.5 be revised to allow a provision for evaluating vendor updates and implementing those updates, if applicable.

Response: The proposed rewording has been incorporated into Section 2.5.

#### Centerior Energy

Comment: The guidance should be explicit enough to allow for utilities to reference topical reports submitted by non-NSSS vendors.

Response: Utilities have been added to the example of organizations that develop methods.

Comment: The proposed guidance should be sufficiently flexible to allow substitution of computer codes within an approved analytical methodology.

Response: The Application Procedures have been modified to allow this, but should contain proper controls to preclude misapplications or inappropriate use of an application.

Comment: NRC should maintain a listing of the codes or methods it has approved.

Response: The NRC is currently developing a data base of approved codes as a separate action.

Comment: NRC should define the point at which reapproval of updates is necessary.

Response: What constitutes a significant code or methodology update that must be reviewed by the NRC is too complex a topic to fully address in generic terms at this time. However, as mentioned in the *Federal Register* notice (October 25, 1995 (60 FR 54712)), the NRC is also investigating modified procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. Therefore, it is anticipated that this topic will be addressed at a future date.

**NRC FORM 8C**  
**(7-94)**  
**NRCMD 3.57**

**COVER SHEET FOR CORRESPONDENCE**  
**USE THIS COVER SHEET TO PROTECT ORIGINALS OF**  
**MULTI-PAGE CORRESPONDENCE**

Attachment 3

PUBLIC COMMENT LETTERS

DS09  
J. Shapovalov  
**Studsvik of America, Inc.**  
L. Kopp

60 FR 54712  
Oct. 25, 1995

December 6, 1995

①  
12/10/95 10:49  
RECEIVED

Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
Mail Stop T-6D-69  
Washington, D.C. 20555-0001

Subject: Studsvik of America Comments on Proposed Generic  
Communication; Licensee Qualification for Performing Safety  
Analyses (M91599)- Federal Register Notice/Vol. 60, no. 206/  
Wednesday, October 25, 1995

Dear Sir:

The following are the comments of Studsvik of America, Inc. on the above referenced Federal Register Notice. Studsvik of America's business area is software for BWR and PWR reactor physics calculations. Our primary software packages are CASMO-3 (and recently released CASMO-4), and SIMULATE-3. The CASMO-3/SIMULATE-3 package is being used by approximately twenty U.S. utilities for activities such fuel management, core follow, core data books, start-up predictions, physics data for safety analyses and spent fuel pool criticality analyses. To date CASMO-3/SIMULATE-3 has been submitted by seven utilities and approved for use by the NRC seven times.

All Studsvik of America, Inc. comments are restricted to codes and the associated methods used in the calculation of physics parameters for safety analyses.

**Comments on reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods:**

1. To what extent can an organization other than the NRC (a third party) review a new methodology or a significant change to an existing methodology?

Third party reviews of new or significantly changed codes or methodologies could be obtained from independent technically qualified individuals or organizations. The requirements

~~9512 140057~~ HPP

# Studsvik of America, Inc.

associated with the use of a third party could be defined via a company program that implements the guidelines defined by the NRC in a generic communication similar to the proposed Supplement to Generic Letter 83-11.

- a. What capabilities should be required of a third-party reviewer?

The third-party should be a technical expert in the area, as defined by educational background and work experience. Also, the third-party reviewer shall be independent of the requesting organization and have no commercial interest in the approval or disapproval of the code or methodologies being reviewed. Reviewer requirements could be defined by the company's program.

- b. What is the safety significance of not having the NRC perform the review?

For physics parameters associated with the safety analyses the safety significance should be none for two reasons: 1) For a number of years technical reviews of this type were successfully subcontracted out to third parties by the NRC, and 2) A technical review of the codes and/or methods used in the calculation of physics parameters does not require a detailed knowledge of the particular plant or reactor being analyzed.

- c. What documentation should be submitted to the NRC by the third-party reviewer and/or by the licensee?

The vendor or licensee should submit an information copy of the report documenting the new or updated code or method and the associated third-party report documenting the review and the results of the review. The report should define the scope of application of the code and/or methods documented.

- d. What type of acceptance should be issued?

The NRC should issue an acceptance letter indicating that the licensee or vendor followed a program that is in compliance with their guideline.

- e. How would approved references (e.g., Core Operating Limits Report (COLR) parameters in technical specification reporting requirements) be handled?

No comment

# Studsvik of America, Inc.

f. What information, if any, should be available for NRC audit?

Work performed in support of the report or review should be available for NRC audit. Additionally, the licensee's or vendor's program should be available for NRC audit.

2. What other viable approaches can be used for accepting new or revised methods?

For physics parameters, if the licensee or vendor can document that a new or updated code or method produces the same or higher level of accuracy as the previously approved method or code then the licensee should not be required to submit any reports to the NRC. As long as the licensee or vendor is not changing any uncertainties used in the safety analyses.

a. Should a regulatory guide be developed?

A generic letter similar to the one being commented on could be an effective way to address this area.

b. Can a set of criteria, as proposed in the generic letter supplement for previously approved generic methods, also be developed for new methods?

We believe that a generic letter similar to the generic supplement for previously approved methods could be developed. The only additions would be that the licensee must submit the report and the results of the review by an independent third-party to the NRC. No approval would be required from the NRC the submittal is provided to keep the NRC informed.

3. To what technical disciplines should this process apply?

We believe that this process should apply to the generation of physics parameters for safety analyses.

## Comments on Supplementary 1 to NRC Generic Letter 83-11:

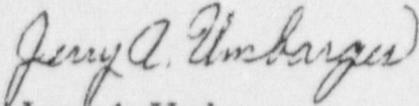
1. Please clarify that "safety analysis" includes the physics parameters and codes used to generate them.
2. For physics codes, approval of the code should be separate from the application method. We believe that this letter can be interpreted this way but a clarification would help licensees and vendors.
3. The only codes and methods that are addressed by this process are those that

# Studsvik of America, Inc.

the NRC has reviewed and approved. CASMO-3 and SIMULATE-3 has been reviewed and approved seven times for use by individual utilities for all types of reactors in the United States but a clarification of what constitutes NRC approval of a code and/or method would be helpful.

4. A clarification of what constitutes a significant code and/or methodology update that must be reviewed by the NRC would add clarity.

Regards,



Jerry A. Umbarger

U.S. Business Manager

DS09  
J. Shapaker  
L. Kopp



60 FR 54712  
Oct. 25, 1995

NTD-NRC-95-4604

2

Westinghouse  
Electric Corporation

Energy Systems

Nuclear Technology Division

Box 355  
Pittsburgh Pennsylvania 15230-0355

December 7, 1995

Mr. David L. Meyers  
Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike  
Rockville, MD 20852

ATTENTION: Docketing and Service Branch

Dear Mr. Meyers:

Subject: Proposed Generic Communication; "Licensee Qualification for Performing Safety Analyses" (60 FR 54712, October 25, 1995)

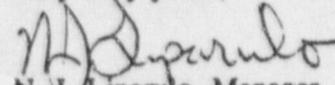
The attached comments are submitted by the Westinghouse Electric Corporation ("Westinghouse") in response to the United States Nuclear Regulatory Commission ("NRC") request for public comments on the proposed generic communication, "Licensee Qualification for Performing Safety Analyses."

Westinghouse supports the NRC's proposed Supplement 1 to Generic Letter 83-01, Licensee Qualification for Performing Safety Analyses in Support of Licensing Actions, which provides a simplified approach for qualifying plant licensees to use NRC approved analysis methods and codes. Westinghouse also supports the NRC's initiative to investigate possible procedural modifications to reduce the resource effort for review and acceptance of previously approved new or revised licensee and vendor analysis methods and codes. Such modifications could significantly reduce the review costs and resources without diminishing NRC oversight and controls. Westinghouse alone, spends hundreds of thousands of dollars each year on NRC reviews.

New and revised analysis methods and codes provide the plant licensees with substantial benefits, such as, increased fuel performance, higher plant availability, increased safety margins, and lower plant operating costs. The quicker these new and revised methods and codes can be reviewed and approved by the NRC, the quicker the plant licensees can realize these benefits. Westinghouse believes that the NRC can improve the review process for new and revised analysis methods and codes through increased use of third party reviewers.

Westinghouse appreciates the opportunity to provide these comments. Should you wish to discuss our comments in greater detail, please contact me at (412) 374-5169.

Very truly yours,

  
N. J. Liparulo, Manager  
Nuclear Safety Regulatory and Licensing Activities

cc: J. Eaton/NEI

~~9512140067~~ bpp.

## RESPONSE TO NRC QUESTION ON THIRD PARTY REVIEWERS

Westinghouse has extensive experience with third party reviewers. The reviews are generally very thorough and performed in a timely manner. However, in some cases, the scope and cost of the review has substantially increased with little or no increase in safety. Since the review cost is paid by the vendor or licensees, neither the NRC nor the third party reviewers have any incentive to control the scope, schedule or cost of the review. Overly detailed reviews also extend the review cycle and in some cases the review cycle time has exceeded the development cycle time. Increased review costs and longer review periods erode Westinghouse's competitive advantage of being first to the market place with a new or revised analysis method or code. If these conditions continue, Westinghouse will have difficulty justifying future investments in new or improved analysis. However, Westinghouse believes that these issues can be corrected through a more streamlined process as suggested in the NRC proposal provided that the process is properly controlled.

### 1) To what extent can an organization other than the NRC (third party) review a new methodology or a significant change to an existing methodology?

A third party reviewer, such as a national laboratory, research institute or outside consultant must have the expertise and ability to provide an in-depth independent review of the new or revised methodology and codes. The third party reviewer also must have previous experience with the review topic with sufficient knowledge of the results of previous NRC reviews and acceptance criteria. The NRC should maintain a listing of qualified reviewers and their areas of expertise. The vendor or licensee should have input into the selection of the third party provided that the appropriate NRC oversight and controls are in place to ensure a level playing field.

The third party reviewer should not have a conflict of interest with respect to the analysis or methods and codes being reviewed. The third party reviewer should not be developing or participating in the development of similar analysis, participating in the sale and or endorsement of similar methods and codes or analysis, or providing services using similar analysis or methods and codes. Such activities could create a conflict of interest.

### (a) What capabilities should be required of a third party reviewer?

The following reviewer capabilities should be required:

- o Qualified/approved by the NRC
- o Capability to perform review with minimal NRC direction
- o Experience and knowledge of the review topic and the associated regulatory requirements (acceptance criteria, guidelines, standard review plan)
- o Technical expertise to provide an independent interpretation, calculation and verification
- o Appendix B Quality Assurance program

In addition to these basic capabilities, the third party reviewers should be able to agree to the following requirements:

- o Sign Proprietary Agreements with vendor or licensee if requested
- o Dedicate the necessary resources to perform the review in a timely manner
- o Provide resumes of personnel and alternates to be used in the review process
- o Provide a commitment to the specific review scope, cost and schedule (including penalties if the review is not completed on-time or if the review costs are exceeded)
- o Effectively communicate with the vendor or licensee during the review process

**(b) What is the safety significance of not having the NRC perform the review?**

From a regulatory standpoint the NRC has the resources and expertise to ensure that all safety regulations, guidelines, standard review plans, etc. are adhered to, and that "regulatory effectiveness" is maintained. Therefore, there is no safety significance by not having the NRC perform the reviews. It should be pointed-out that the NRC has historically used third party reviewers to perform reviews of highly technical and complex methods and codes. When a third party performs a review "regulatory effectiveness" is preserved by virtue of NRC oversight of the review and the interactions between the vendor or licensee and the third party reviewer. The NRC must still ultimately approve or disapprove the new or revised analysis methods and codes. This ultimate responsibility cannot be delegated to a third party. The NRC technical overview must concur that the review of the new or revised analysis method is technically correct and provides adequate public safety. However, NRC overview can exist without the loss in cycle time that is currently experienced due to the significant time delay between the third party TER and the NRC SER, due to low NRC priorities currently assigned to these activities. One possibility is that the SER can be combined into one document, developed by the third party with NRC approval. The NRC overview in this case would consist of maintaining "regulatory effectiveness" and assuring a "level playing field", i.e., all reviews of equivalent methodologies are consistent in depth, scope. It is extremely important that a "level playing field" is maintained throughout the industry to assure that no vendor or licensee is unfairly or adversely affected by inconsistencies between reviewers or by any one reviewer.

**(c) What documentation should be submitted to the NRC by the third party reviewer or the licensee?**

Prior to starting the review, the licensee or vendor should submit to the NRC a copy of the topical report to be reviewed. Then, during the course of the review process, the third party reviewer should provide the NRC and licensee or vendor periodic reports as to the status of the review, schedule and cost. During the course of the review process, the third party reviewer should provide the NRC with a copy of all review questions sent to the licensee or vendor. The vendor or licensee should also provide the NRC with a copy of all responses sent to the third party reviewer.

At the conclusion of the review, the third party reviewer should provide the NRC and licensee or vendor with a summary report of the review detailing their conclusions, explanation of any differences between the calculational results and the comparison data, and any recommendations. Information such as calculations, documentation, review guidelines, personnel qualification, and proprietary agreements, should not be submitted to the NRC, however, this information should be available for NRC audits.

**(d) What type of acceptance (e.g., safety evaluation report) should be issued?**

The third party reviewer could prepare a combined TER and SER for NRC management review and approval. This process could be used for new and revised methods and codes without any compromise of the NRC regulatory responsibility which the NRC, could adequately discharge through its review and approval of the SER.

In addition, minor changes in methodology should be allowed to be made by the vendor or licensee without NRC or third party review, if a specific set of criteria, previously approved by the NRC, are satisfied. This would be similar to the 50.59 determination, i.e., the methodology change meets the NRC licensed criteria, no prior review and approval is required. The NRC would be informed as to the specific methodology changes and documentation that these changes fall within the NRC approved criteria. The licensee or vendor would retain the necessary documentation and have it available if requested by the NRC.

- (e) How would approved references, e.g. Core Operating Limits Report (COLR parameters in Technical Specification reporting requirements) be handled?

This could be handled by referencing the document transmitting the approved new or revised method from the third party to the NRC. The documentation should be labeled in some unique manner that is identified as being identified as to the extent approved and found acceptable for reference in license applications by the NRC. This endorsement can then be referenced in documentation such as COLRs, etc.

- (f) What information, if any, should be available for NRC audit?

Information, calculations, and documentation supporting the guidelines and criteria established for the third party review and approval should be available for the NRC audit. Also information, calculations, memos, and documentation generated as part of the review process. In addition, the training and qualification records of the reviewers, Appendix B Quality Assurance guidelines, proprietary agreements, time cards, plus travel and materials costs records should be available for NRC audits. This information, with the exception of the training/qualification records of the reviewers his information should also be available for audits by the vendor or licensee. Training and qualification records should also be available for such audits subject to appropriate protection of individual privacy rights.

- 2) What other viable approaches can be used for accepting new or revised methods and codes?

The Westinghouse licensed Fuel Criteria Evaluation Process (FCEP) (WCAP-12488-A) has been used successfully to streamline the licensing process for fuel design changes. This process has been used in a limited way for methodology changes. It is proposed to have a Methodology Criteria Evaluation Process (MCEP) that would extend the same process as FCEP but to changes in methodology. By this process the vendor or licensee could license a set of methodology criteria. Once these criteria are approved, individual methodology changes which meet the criteria would not have to be submitted to the NRC for prior review and approval.

Another viable approach is to have the NRC specify benchmarking problems and criteria for the new or revised methods and codes. Acceptance of these new or revised methods and codes would be based on the vendor or licensee meeting the NRC criteria and demonstrating compliance to the methods and codes.

A similar approach to that being proposed by the NRC would be to have the vendor or licensee directly contracting with the NRC qualified third party reviewers. With this approach the vendor or licensee would submit a description of the new or revised analysis methods and codes to the NRC. The NRC would review the description and determine which of the third parties would qualify as suitable reviewers. The NRC could provide a list of qualified third party reviewers to the vendor or licensee. The vendor or licensee could then independently contract with one or more of the qualified reviewers. Depending on the number of qualified reviewers, this process may be open to competitive bidding. The final contractual arrangements, compensation, review process, conflict of interest, personnel assigned, reporting process, and proprietary information controls would be available for NRC audit. During this process, the NRC would maintain an oversight position and would be able to provide input as to the scope and completeness of the review, schedule, and to the reasonableness of review comments and questions. As with the NRC approach, the third party reviewer would provide a TER to the NRC. If requested by the NRC, the third party reviewer could develop the SER as

well. This approach would provide the vendor or licensee with more control over the review cost and schedule.

**(a) Should a regulatory guide be developed?**

A regulatory guide should be developed to define acceptable approaches by providing a consistent set of third party reviewer, vendor/licensee, and NRC responsibilities, reviewer qualification standards (technical and regulatory experience), NRC qualification process, level of independent verification of analysis results, and Quality Assurance requirements.

**(b) Can a set of criteria, as proposed in the generic letter supplement for previously approved generic methods and codes, also be developed for new methods and codes?**

Yes, a set of criteria similar in detail to that provided in the proposed generic letter supplement can be developed for review of new and revised methods and codes by the vendors or licensees.

**3) To what technical disciplines should this process apply?**

The use of third party reviewers can be applied to any of the major technical disciplines listed below:

- o Nuclear Analysis
- o Thermal-Hydraulic
- o Fuel Performance
- o Seismic, Equipment Qualification
- o Transient or non-LOCA
- o LOCA/ECCS Performance
- o Containment Response
- o Risk Assessment/Reliability Engineering
- o Radiation Protection
- o Instrumentation and Controls
- o Equipment Engineering
- o Structural Engineering
- o Electrical Engineering
- o Systems Engineering
- o Technical Specifications
- o Decommissioning/Decontamination

## COMMENTS ON PROPOSED SUPPLEMENT TO GENERIC LETTER 83-11

- ① This proposed supplement contains basically the same information that Westinghouse previously provided in their submittal to the NRC, NTD-NRC- 5-4419. The submittal informed the NRC that Westinghouse agreed with a GE recommendation simplifying the NRC process necessary to review a utility's request for licensing of vendors' methodology and proposed that this same approach be used by our utility customers. In addition, our approach is consistent with the guidelines presented in proposed Supplement 1. Overall, Westinghouse is in agreement with the proposed Supplement with the following suggestions.
- ② Westinghouse encourages the NRC to reemphasize the original intent of Generic Letter 83-11 which was that NRC's experience with safety analyses has shown that a large percentage of all errors or discrepancies discovered in safety analyses can be traced to the user rather than the code itself.



FPL

0509

J. Shapaker

L. Kopp

Florida Power & Light Company, P.O. Box 14000, Juno Beach, FL 33408-0420

60 FR 54712

Oct. 25, 1995

DEC 8 1995

L-95-326

3

Chief, Rules Review and Directives Branch  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: *Proposed Generic Communication; Licensee  
Qualification for Performing Safety Analyses*  
60 FR 54712  
Request for Comments

On October 25, 1995, the Nuclear Regulatory Commission published for public comment, "Proposed Generic Communication; Licensee Qualification for Performing Safety Analyses," a proposed supplement to NRC Generic Letter 83-11. These comments are submitted on behalf of Florida Power & Light (FPL), a licensed operator of two nuclear power plant units in Dade County, Florida and two units in St. Lucie County, Florida.

FPL supports NRC's proposal to streamline the lengthy process for review and approval of topical reports to allow a licensee to use approved codes and methods. Additionally, we propose that the NRC allow the licensee to modify the Core Operating Limit Report (COLR) without specific NRC review, so long as the methods and codes have already been approved by the NRC.

The following responds to NRC's request for comments on the review of topical reports. The responses are numbered consistently with the questions and do not apply to Generic letter 83-11 Supplement 1.

- (1) A third party is capable of conducting an adequate review of a vendors' topical report.
  - (a) The third party reviewer must have expertise in the subject matter, a qualified quality assurance program, and no conflict of interest.
  - (b) There is no safety significance in not having the NRC perform the review.
  - (c) The third party reviewer must provide a full report documenting the independent assessment of the Topical Report and the qualifications of those individuals who performed the assessment.
  - (d) A Safety Evaluation Report must still be issued by the NRC.

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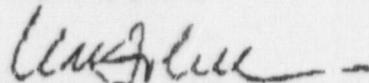
L-95-326

Page 2

- (e) Changes to the COLR must be handled administratively, without requiring NRC review.
- (f) The third party reviewer must make all relevant calculations and exchanges available for audit by the NRC.
- (2) With respect to alternatives for accepting new or revisions to methods, FPL concurs with the NRC that guidelines should be developed to specify NRC's requirements for review of topical reports and to streamline the process.
- (3) FPL recommends that this process be applicable for the review of new topical reports or existing topical reports with significant modifications to physics, safety and fuel performance analyses.

We appreciate the opportunity to comment on this proposed generic letter supplement

Very truly yours,



W. H. Bohlke  
Vice President  
Nuclear Engineering and Licensing

WHB/spt

Duke Power Company  
P.O. Box 1006  
Charlotte, NC 28201-1006

J. Shapaker  
L. Kopp

60 FR 54712  
Oct. 25, 1995  
(4)



**DUKE POWER**

December 7, 1995

Mr. David L. Meyers  
Chief, Rules Review and Directives Branch  
Mail Stop T-6D-69  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555-0001

Subject: Proposed Generic Communication; Licensee Qualification for Performing Safety Analyses  
Federal Register Vol. 60, No. 206, October 25, 1995

Dear Sir:

The following comments are submitted in response to the Federal Register Notice of Opportunity for Public Comment dated October 25, 1995. Duke Power Company has been actively involved in submitting topical reports for NRC review and approval since 1979 in the areas of reload design and safety analysis. We support the NRC's proposed initiatives related to improving the process of topical report licensing as described in the draft Supplement 1 to Generic Letter 83-11. Based on our experience to date and our expectations for a continuing need for licensing of upgrades to current analytical methodologies, the following comments are offered for your consideration.

**Supplement 1 to G. L. 83-11: Licensing Qualification for Performing Safety Analysis**

Duke Power supports the concept of eliminating the need to submit detailed topical reports before a licensee can apply previously approved codes and methods. The proposed guidelines in Attachment 1 are a reasonable approach for qualifying a licensee. The following aspects are offered for your consideration:

1. The NRC has often included language in topical report SER's that restricted the application of the methodology to the plants operated or supported by the licensee of the methodology. It is reasonable to restrict application of the licensed methodology to similar plant designs, but it is not reasonable to restrict application to the original licensee or to a specific plant or plants. The NRC should generically lift these restrictions to facilitate implementation of the proposed licensing approach.
2. In Attachment 1, Paragraph 1.0 Introduction, it should state that the codes are developed by vendors, utilities, national laboratories, or organizations like EPRI, and that methods are licensed by vendors, utilities, and industry groups.

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3. The scope of "safety analyses" should be defined or the language broadened to cover any analytical areas including reload physics design, core thermal-hydraulic analysis, fuel mechanical analysis, transient analysis, dose analysis, setpoint analysis, containment response analysis, criticality analysis, statistical methods, and any other analytical area for which topical reports have been submitted and approved by the NRC.

**Proposed Generic Communication; Licensee Qualification for Performing Safety Analyses**

- (1) To what extent can an organization other than the NRC (a third party) review a new methodology or a significant change to an existing methodology?

Comment: A qualified third party could provide the review function, similar to the contractors that have been used by the NRC in the past. The NRC would perform its regulatory function by auditing the results of the methodology application including the details of the third party review.

- (a) What capabilities should be required of a third-party reviewer?

Comment: The third party reviewer should be a holder of a licensed methodology which is similar to that which is to be reviewed. As a minimum, the third party must be a recognized expert in the specific subject matter to be reviewed. The third party must be independent of the computer code(s) being applied in the methodology (not the code vendor). The licensee should notify the NRC of the organization that it intends to use as a third party prior to implementation. The NRC should express any concerns regarding the third party within a reasonable timeframe following notification.

- (c) What documentation should be submitted to the NRC by the third party reviewer and/or by the licensee?

Comment: The licensee should submit a description of the new methodology at least 90 days in advance of its intended application. This will enable the NRC to identify any concerns prior to implementation and to initiate an audit. The licensee will maintain documentation of the third party review. The licensee will also maintain (but not submit) technical documentation necessary to facilitate an NRC audit, such as an internal topical report, computer code manuals, and calculation files.

- (d) What type of acceptance (e.g. a safety evaluation report) should be issued?

Comment: The licensee will maintain documentation of the third party review. The NRC will issue a report (safety evaluation report or inspection report) following any audit.

- (e) How would approved references (e.g., Core Operating Limits Report (COLR) parameters in technical specification reporting requirements) be handled?

Comment: The list of approved references needs to be moved out of Technical Specifications and into the Technical Specification bases or the COLR. The licensee will update this list whenever a new reference is applied to a reload design. In this manner the

NRC will be provided with an up-to-date list of approved methodologies that are in use, and since the list will be in the bases or COLR only, it will not require NRC review and approval.

(f) What information, if any, should be available for NRC audit?

Comment: The topical report that was prepared but not submitted for review, documentation detailing the third party review, and all documents detailing the methodologies, computer codes, and analyses performed.

(3) To what technical disciplines should this process apply?

Comment: All areas for which topical reports were previously submitted for NRC review and approval can utilize this process. These areas would include computer codes, reload physics design, core thermal-hydraulic analysis, fuel mechanical analysis, transient analysis, dose analysis, setpoint analysis, statistical methods, containment response analysis, and criticality analysis.

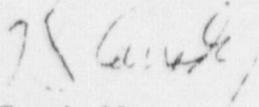
#### **Need For Improved Guidance For Licensing Minor Topical Report Revisions**

Another related issue that is not being addressed per the Federal Register notices of October 25, 1995 is the process for regulatory oversight of minor revisions to approved topical reports. This issue has been a continuing problem in the past. Duke Power requests the NRC establish some guidelines for when a revision must be submitted for review, and when submittal is unnecessary. This problem will carry over into the proposed third party review process, since it will remain unclear as to when the third party review is needed. The following are examples we have encountered:

- Application of an NRC-approved CHF correlation in an NRC-approved core thermal-hydraulic design methodology when the CHF correlation is not included in the approved methodology report
- Revision of NRC-approved topical reports due to a change in fuel assembly design, such as a change in the fuel rod diameter, grid design, or addition of integral absorbers
- Revision of NRC-approved topical reports due to replacement steam generators which differ in design
- Revision of NRC-approved topical reports due to a change in nodalization
- Revision of NRC-approved topical reports to implement a new version of an NRC-approved computer code. The new version could include error corrections, refinements to existing models which result in approved accuracy and/or execution speed, and user convenience features.

Duke Power would like to propose the following process for handling minor revisions to NRC-approved topical reports. If a licensee considers that a change to an NRC-approved topical report is minor in nature, then the licensee will notify the NRC of the intended change and request that the NRC inform the licensee within 90 days if the NRC requires formal review of the revision. If the NRC requires review prior to implementation, it can initiate review, ask clarifying questions, request third party review, or audit the licensee. If the NRC does not respond to the licensee, then the licensee can implement the minor revision without NRC review or a documented third party review. The NRC can audit such minor changes at its discretion.

In summary, Duke Power supports the initiatives in the October 25, 1995 Federal Register notifications. The above comments, including the suggestions in the area of licensing minor revisions to NRC-approved topical reports, will serve to clarify and add value to the regulatory process. The industry will be well-served by these initiatives, and both industry and NRC resources will be more efficiently utilized upon implementation. Any questions related to these comments can be addressed to Scott Gewehr (704) 382-7581 in our licensing organization, or Gregg Swindlehurst (704) 382-5176 in our Nuclear Engineering Division.

  
K. S. Canady, Manager  
Nuclear Engineering Division  
Nuclear Generation Dept.

GBS/

cc: G. B. Swindlehurst  
R. H. Clark  
R. M. Gribble  
R. R. St. Clair  
R. Van Namen  
G. A. Copp  
S. A. Gewehr  
Z. L. Taylor (CNS)  
J. E. Burchfield, Jr. (ONS)  
J. E. Snyder (MNS)

DS09  
J. Spopaker  
L. Kopp



60 FR 54712

Oct. 25, 1995

(5)

RECEIVED  
OCT 27 11 03:18

Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 402

December 8, 1995

U. S. Nuclear Regulatory Commission  
ATTN: Chief, Rules Review and Directives Branch  
Mail Stop T-6D-69  
Washington, DC 20555-0001

Dear Sir:

COMMENTS ON THE PROPOSED SUPPLEMENT 1 TO GENERIC LETTER 83-11:  
LICENSEE QUALIFICATION FOR PERFORMING SAFETY ANALYSES

We have reviewed the subject document and offer the following comments for your consideration:

1. A regulatory guide and review criteria should be developed to ensure a consistent application of the proposed rule. A standard criteria will maintain auditability of the product.
2. Third-party reviewers should be documented on an approved reviewer list to ensure that reviews performed by them are accepted by NRC during the audit phase.
3. The process for implementing a new methodology should be streamlined to facilitate the latest technology available in the industry.

We support and applaud the NRC efforts to reduce the resource burden on licensees and hope you will find these comments useful.

Sincerely,

Patrick P. Carier  
Manager  
Corporate Licensing

~~9512140064~~ 10

W 007  
J. Shyppaken  
L. Kojan



60 FR 54712  
Oct. 25, 1995

NUCLEAR ENERGY INSTITUTE

(6)

Thomas E. Tipton  
VICE PRESIDENT  
OPERATIONS & ENGINEERING

December 11, 1995

Mr. David L. Meyers  
Chief, Rules Review and Directives Branch  
Mail Stop T-6D-69  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**ATTENTION:** Docketing and Service Branch

**SUBJECT:** Proposed Generic Communication; Licensee Qualification for Performing Safety Analyses (60 *Federal Register* 54712, October 25, 1995), Request for Comments

Dear Mr. Meyers:

These comments are submitted on behalf of the nuclear power industry by the Nuclear Energy Institute (NEI)<sup>1</sup> in response to the October 25, 1995, *Federal Register* Notice of Opportunity for Public Comment concerning the Proposed Generic Communication transmitting for public comment draft Supplement 1 to Generic Letter 83-11, Licensee Qualification for Performing Safety Analyses.

NEI supports the concept of eliminating a licensee qualification topical report for performing core reload safety analyses. The guidelines proposed for generic use appear to be reasonable to implement and may result in significant savings to NRC staff and licensees in both time and resources. Currently, some licensees have in place many of the elements of these guidelines, such as having a proceduralized process and performing comparison calculations.

Having licensees notify the NRC by letter that they have implemented the guidelines by program, and having the program documentation available for NRC audit at the site or utility to ensure compliance is a more efficient use of both NRC and licensee resources.

---

<sup>1</sup>NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy issue.

9512140066

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Mr. David L. Meyers

December 11, 1995

Page 2

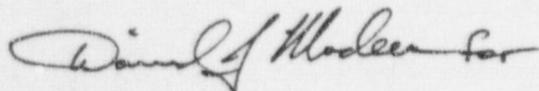
- ① The discussion in Section 2.5, "Quality Assurance and Change Control" duplicates existing QA program activities embodied in Criteria II, III, XVI, and XVII of Appendix B to 10 CFR Part 50. Specifically, the last sentence of the section, beginning with "The licensee's QA program should also include the following: ..." is redundant to the previous statements in Section 2.5 and is a level of detail not needed in the supplement. We recommend this sentence be deleted.
- ② In addition, the first sentence in Section 2.4, "Comparison Calculations," would imply that all the suggested set of benchmark data is required to satisfy the comparison review. We recommend that the sentence be revised to state "Licensees should verify their ability to use the methods by comparing their calculated results to an appropriate set of benchmark data, such as physics startup tests, measured flux detector data during an operational cycle, or vendor results."

In regards to the request for comments concerning modified procedures for reviewing and accepting new or revised analysis methods, NEI supports the concept of an independent third-party review of new or revised methodologies. The major architect/engineering firms, fuel vendors, and major technical organizations such as the Electric Power Research Institute, that develop and use safety codes and methods, have the experience and technical ability to perform this function.

The specific issues the NRC staff raises in the *Federal Register* relative to third party review appear to be primarily ones of NRC interaction and control and not easily addressed in the abstract. Rather, they can be more efficiently addressed by direct interaction with the interested parties. Therefore, we see little value in developing a regulatory guide.

We support the effort to reduce the resource burden on licensees and NRC staff and encourage the NRC to move forward with similar reviews and improvements.

Sincerely,



Thomas E. Tipton

JHE/rs

c: Laurence I. Kopp, NRC

Commonwealth Edison Company  
1400 Opus Place  
Downers Grove, IL 60515

0509

O. Skapocka

L. Kopp

60 FR 54712

Oct. 25 1995

⑦

December 11, 1995

Chief  
Rules Review and Directives Branch  
U. S. Nuclear Regulatory Commission  
Mail Stop T-6D-69  
Washington, D. C. 20555-0001

**ComEd**

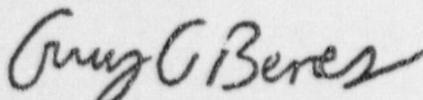
Subject: Commonwealth Edison Company  
Comments on Proposed Supplement 1 to Generic Letter 83-11: Licensee  
Qualification for Performing Safety Analysis

Reference: 60 FR 54712 dated October 25, 1995

Enclosed in Attachment 1 are Commonwealth Edison Company (ComEd) comments on the proposed Supplement 1 to Generic Letter 83-11: Licensee Qualification for Performing Safety Analysis. In addition, the NRC also requested comments on reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. ComEd's comments to the NRC questions listed in the Referenced Federal Register Notice are also included as Attachment 2.

Commonwealth Edison believes that streamlining initiatives like these are very worthwhile and we strongly support the NRC's efforts in this area. To be fully effective in reducing unnecessary resource burdens associated with changes in safety analysis methods or user qualifications, the current practice of listing the approved methods for establishing core operating limits in the Technical Specifications administrative section should be changed to allow relocation of the references to the Core Operating Limits Report (COLR). Because these references are, by definition, only for previously approved methods (i.e. for which an SER has already been issued), this would clearly be safety neutral and would eliminate numerous licensing amendments that are purely administrative and add little, if any, value to the regulatory process. This comment has been previously submitted in response to the request for comments on the 1993 NRC Regulatory Review Group's report concerning burden reduction.

ComEd appreciates the opportunity to comment on this matter which we believe is very worthwhile, and would welcome any further interaction deemed necessary by the NRC Staff.



Gary G. Benes  
Nuclear Licensing Administrator

~~9512140115~~ 611

## ATTACHMENT 1

Comments on Proposed GL 83-11 Supplement

- 1) The supplement is a significant improvement and provides needed flexibility in the methods review and approval process. As indicated in the NRC's 1993 Regulatory Review Group's report, there have been significant delays in review and approval of licensee Topical Reports for several reasons including Staff insufficient resources and priority, lack of clear and consistent guidance on the content and level of detail expected in such Topicals, etc. The delayed approvals have resulted in utility costs to support parallel vendor efforts, delayed realization of savings associated with in-house analyses, and delayed realization of the improved in-house capabilities and technical expertise that comes with performance of safety analyses of record. Elimination of a Topical submittal in the case of a technology transfer of NRC approved methods is appropriate as long as documentation is comprehensive and available. CECO therefore strongly endorses the Staff plans to issue further guidance on ways that the licensee can accelerate the implementation of safety analysis methods which have previously been approved by the NRC.
- 2) The terminology and criteria set forth in the supplement are general and open to interpretation. This can be beneficial or detrimental, depending on the specific reviewer. For example in Section 2.4, what the licensee may think is appropriate justification for an observed deviation in comparison calculations may satisfy one reviewer but not another. Training adequacy may also be somewhat subjective. Some of the questions stated in the Notice regarding new or revised methods are also relevant and may result in helpful clarifications.
- 3) Section 2.2 Application Procedures - The intent of the term "application procedure" could be misinterpreted. Because of the bounding nature of many licensing-grade transient analyses especially those which allow applicability to multiple reloads, it should not be necessary to have formulated application (transient by transient) specific procedures. This is often the case, for example, with PWR non-LOCA safety analyses performed for FSAR Chapter 15 events. In such cases, it should be sufficient to rely on:
  - a) a very thorough and prescriptive training program,
  - b) detailed calculation notebooks and documentation,
  - c) use of comprehensive independent reviews as part of a rigorous and proceduralized controlled work process, and
  - d) extensive use of references such as EPRI's RASP guidelines and/or fuel vendor safety analysis standards.

The code limitations and any NRC restrictions can still be included in appropriate licensee procedures in lieu of event specific procedures. The use of a more general form of "application procedure", in conjunction with the above program elements, ensures that the use of approved methods is consistent with the code qualification and approved applications of the methodology.

## Attachment 1 (cont'd)

- 4) Section 2.4 Comparison Calculations - These comparisons are essential to assuring that the licensee has properly implemented the methods. Such comparisons will inherently indicate some magnitude of differences (i.e. perfectly precise agreement would not be expected due to measurement uncertainties, testing and analysis methods differences). The statement "Any deviations in the calculations of safety-related parameters should be justified in the report" should therefore be qualified to read "Significant, unexpected, or unusual deviations should be..." This would avoid extensive justification efforts for trivial differences that might otherwise result from a literal application of the proposed Supplement 1 wording.
  
- 5) Section 2.5 Item (1) - Vendor update implementation should be clarified to refer specifically to updates that are necessary to correct errors or deficiencies that adversely affect (or could affect) the quality of the analysis. The currently proposed wording could imply that the licensee must implement all changes that the vendor makes including purely discretionary enhancements or options that have no impact on maintaining acceptable quality in those analyses performed by the licensee. An alternate suggested wording for "(if applicable)" is therefore: "if necessary to correct deficiencies which are potentially adverse to the quality of licensee safety analyses".

Section 2.5 could also appropriately reference 10 CFR Part 21 reporting.

## ATTACHMENT 2

### Potential Approval Process Changes for New or Revised Methods

Comments in Items 1 through 3 below address the correspondingly numbered questions in the Notice that concern the potential for similar streamlining of the review and approval process for new or revised methods. Items 4 and 5 also relate to issues associated with this part of the Notice.

1. Third party reviews are appropriate for many proposed methodologies and methods changes. Third party reviews can be effective in assuring safety while easing NRC Staff resource burdens and should be allowed provided that they have the attributes noted below:
  - a) The third party reviewer should provide evidence of a good understanding of the code in questions (or a similar code) AND experience in code use similar to that of the intended application. See additional discussion under item 4.
  - b) Adequate reviews (by either the NRC or third party acting on behalf of the NRC) should provide assurance that the codes and methods are appropriate for the proposed applications. There should be no safety significance of third party reviews. Also see item 4.
  - c) The documentation submitted should include an audit or evaluation report (third party) and a topical report (vendor or licensee) if truly "new" methods are involved. The topical report for new methods could be significantly reduced in scope compared to current practice if an analogous approach is developed to that proposed in the Supplement. For evolutionary changes in existing, approved codes, the topical report should not be needed at all, i.e. an approach fully consistent with the Supplement should be possible that relies on a letter which confirms that acceptance criteria (established by the NRC) have been met, with subsequent audits as needed.
  - d) An approval letter should be issued which describes the intended application along with any limitations or restrictions deemed necessary.
  - e) References for approved methodology should be included in the licensee's documentation of any application of that methodology. Sufficient documentation of the intended use of the methodology should be available for public comment via correspondence available in the public document room. The NRC approved methods which form the basis for establishing core operating limits should be listed in the cycle-specific COLR rather than in the administrative section of the Technical Specifications (TS). The benefit would be a reduction of unnecessary administrative license amendments which add no value (as discussed in the transmittal letter for these comments). Relocation of the applicable methods references to the COLR would be safety-neutral because the methods must already be NRC approved, by definition, per Generic Letters 83-11 and 88-16.

## Attachment 2 (cont'd)

The list of references in TS section 6 could be replaced with a statement that only the NRC approved methods listed in the COLR can be used for determining core operating limits. The amendment to accomplish this relocation should therefore constitute a Cost Beneficial Licensing Action and be given appropriate priority when submitted by a licensee.

- f) Licensee information such as procedures, training records, comparison calculation reports, calculation documentation, error reports and corrections and other methods related documents and correspondence should be available for audit. The third party reviewer should maintain training and qualification records, documentation of review activities, and documentation of expenses associated with the review.
2. Methodology extensions (evolutionary changes) should be allowed without the need for extensive prior NRC Staff reviews as discussed in comment 1.c above.
- a) A regulatory guide, because of the wide range of the subject areas needed to be addressed, would likely be fairly general in nature. However, a standard review plan approach would, at a minimum, prescribe what is expected in a submittal to support a request for methodology approval. Based on reviews of previous Topicals submitted by various utilities, their content seems to vary widely. There should be guidance established as to the benchmarks required for the different classes of codes, i.e. so there is some uniformity as to what is needed and not left to the individual desires/opinions of the various reviewers.
- b) Yes, a similar set of criteria could (and should) be developed for new and revised methods. Such criteria should allow elimination of prior NRC reviews for revisions to approved methods and at least a scope reduction should be possible for prior reviews of new methods.
3. Neutronics, thermal hydraulic and transient analyses are the primary areas the process should address. Areas which have not required NRC prior reviews of methods in the past should remain unaffected by implementation of process changes in these traditional (FSAR Chapter 15 and reload licensing) areas .
4. A knowledgeable third party review of a new methodology or significant change to an existing methodology would be efficient and beneficial. NRC has often relied on the national labs or other consultants to perform these reviews. In many cases these reviewers are not necessarily knowledgeable about the current licensing bases or issues related to reactor operations. A more beneficial third party review could be obtained by contracting these reviews to fuel vendors or

## Attachment 2 (cont'd)

even other licensee organizations if they have considerable expertise obtained through years of working closely with operating reactors, developing independent methodology and actually performing design (licensing) analyses. Between these sources it should be possible to obtain services from an organization that has more directly relevant experience while still assuring an unbiased review which is free of possible conflicts of interest. There should be no safety significance issues related to the NRC not having performed a detailed review assuming that they accept the results of the third party review after a general overview by the NRR Staff.

5. A clarification of "new or revised methods" may be needed as it could be unclear whether the intent includes a new way of applying the codes as opposed to an actual change in the codes/algorithms. This is also important to clarify from the standpoint of changes to code inputs associated with plant changes. In an SER on Commonwealth Edison safety analysis methods (C. Y. Shirakyl to D. L. Farrar, dated Feb. 9, 1994 "Zion Station Units 1 and 2 Safety Evaluation Report for Transient Analysis Methodology), the NRC Staff has previously provided a clarification that may be useful in this respect:

"Changes in assumptions and related parameters used in the safety analysis which are not covered by the technical specifications, but which reflect changes in design or operation of the facility or procedures, as described in the safety analysis report, should be addressed in accordance with 10CFR 50.59. In all cases, individual changes which reduce conservatism in the results of the analysis are acceptable as long as they are appropriately justified and the overall model continues to contain conservatism to compensate for calculational uncertainties."

This type of discussion should also apply to very minor code changes. Incorporation of such a clarification in any future guidance on the process for implementing "new or revised methods" would therefore be helpful in assuring that staff and industry resources are not diverted to small changes that do not warrant or require NRC (or third party) review and approval.

**EPRI**  
Electric Power  
Research Institute

0509  
J. Shypakca.  
L. Kopp

60 FR 54712

Oct. 25, 1995

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Leadership in Electrification through Global Collaboration

December 11, 1995

Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
Mail Stop T-6D-69  
Washington, D.C. 20555-0001

Dear Sir:

EPRI appreciates this opportunity to comment on the USNRC's "Proposed Generic communication: Licensee Qualification for Performing Safety Analyses (M91599)" which appeared in the Federal Register Vol. 69, Number 206, October 25, 1995, p. 54712. Overall, we are in accord with the thrust of the proposal to allow third party review of licensee or vendor analysis methods. This would be a cost effective way to proceed in the future.

As a general comment, we note that the phrase "analysis methods" is not explicitly defined, and that it is not clear whether methodologies or computer codes, or both, are being included in this phrase. A clarification of intent would be helpful. Additionally, more specific comments are included in the attachment. For your convenience, these comments have been identified according to the questions asked within the text of the notice.

Sincerely,

*V. K. Chexal for*

V. K. Chexal  
Director  
Nuclear Power Group

782L/VKC/kel

c: R. Jones  
J. Haugh  
A. Singh

9512140123

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## Attachment

Comments on "Proposed Generic Communication; Licensee Qualification for Performing Safety Analyses (M91599)":

1. The term, "insignificant change to an existing methodology" is not well defined.
  - 1a. a) Any organization that has an approved methodology on a similar plant or equivalent expertise should be qualified to perform a review of an application methodology.  
  
b) Any organization qualified to review a code should have the capability to develop a code similar to that being evaluated.
  - 1b. If the reviewer is qualified and there's no conflict of interest, there is no safety significance.
  - 1c. Documentation: A report summarizing (1-f below) and all significant findings, including key criteria validation and benchmarkings, i.e. the basis of the approval.
  - 1d. Acceptance should be handled in a similar manner to current practice (e.g., NRC letter of approval).
  - 1e. Any third party reviewer must have access to all applicable information. This may require non-disclosure agreements. Obtaining such agreements would be the responsibility of the reviewer prior to accepting the work.
  - 1f. A review history would detail a description of who performed the review, the minimal technical requirements of the code or method, the acceptance criteria of each requirements, all supporting calculations, and the application bases. This should be performed under App B QA.

2. A group of independent experts in the appropriate areas could be commissioned in lieu of the "third party organization".
  - 2a. Written guidance should be available.
  - 2b. Yes, good code development, practice, applicable V&V, qualification, and review for specific applications can be developed.
3. Any code or methodology that requires NRC approval should be covered by this process.

Comments on Attachment 1 - "Guidelines for Qualifying Licensees to Use Generically Approved Analysis Methods":

- ① Does the licensee who applies under the attachment base the methodology on a previously approved plant SER or can they develop under these regulations a "new" topical based only on the generic code SER?
- ② Sect. 2.2: For clarity, the words "application of the" should be deleted in the following, "In-house application... and approved application of the methodology,..."
- ③ Sect. 2.3: Training in code or method should be performed by either the developer of the code or method, or someone who has been previously qualified in the use of the code or method.
- ④ Sect. 2.4: "During an operating cycle and vendor...". The "vendor" analysis should be changed to "analysis of record" which may not have been performed by a "vendor" (Vendor is not well defined as it could be the plant, fuel, or code vendor).
- ⑤ Sect. 2.4: "An appropriate set of benchmark..." should include analysis of events, (when adequate plant data does not exist), using higher order codes or published numerical benchmarks.
- ⑥ Sect. 2.4: "Any deviations..." must be explained. It should be changed to "any deviation of engineering significance".



RJR 95-115  
MFN-269-95  
December 7, 1995

9

Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
Mail Stop T-6D-69  
Washington, DC 20555-0001

**Subject: Response to Request for Comments**

**Reference:** Federal Register Volume 60, No. 206, Page 54712/3, Dated 10/25/95

In response to your request for comments on NRC Generic Letter 83-11, Supplement 1 as it appeared in the referenced volume of the Federal Register, GE's Nuclear Energy Production Facility is providing the following comments.

We concur that the submittal of detailed topical reports by the licensees for codes and methods which have already been licensed by the vendor is indeed resource intensive for both the licensee and the staff. Additionally, it is redundant. Therefore we are in complete agreement with the approach which is set forth in the referenced article which would shorten the lengthy review and approval process.

We strongly encourage the acceptance of this supplement as written which states the same criteria as the GE document NEDO-32362, *Utility Licensing of Vendor Methods*, submitted July, 1994 for information as a joint GE/Utility suggestion for this approach. Any reduction in redundant requirements is a step in the direction of reduction in cost burdens for the licensees as well as an increase in time available for both the licensee and the staff to concentrate on issues of significant safety value.

In addition, we would like to comment on other viable approaches for accepting new or revised methods; specifically, item 2(b) of the reference article. The item states, "*Can a set of criteria, as proposed in the generic letter supplement for previously approved generic methods, also be developed for new methods?*" First of all, GE believes that there needs to be a clear definition of both "methods" and "significant changes" to existing methodology. We do believe that a set of criteria can be developed for new methods and for revisions to existing methods. We strongly believe that an improved process is urgently needed, whether this is in the form of a criteria approach, or controls on the timeliness and scope of the traditional approach.

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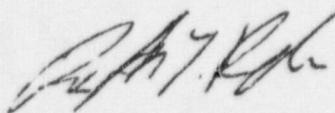
GE has no problem making available any proprietary and technical information for NRC review. We do, however, have some difficulty with the timeliness and scope of these reviews. Based on recent GE experience, prolonged holdups of approvals regularly occur in the management chain after the technical review is completed. Also, the scope of the review frequently becomes expanded in the process of "educating" staff members. We would like to propose an approach to the review and approval process which would include the following:

- The submitter suggests the scope of review. A two week period is allotted for the NRC staff to accept or reject the suggested scope.
- The NRC issues the review schedule.
- Following the scheduled end of technical review, a 30-day period is allocated for management approval. If no communication is forthcoming, the submittal will be considered approved.

GE will, in the next few months, be formulating a set of criteria which they will submit for consideration as an approach to licensing new methods and revisions to existing methods. We will also suggest definitions for "methodology" and for "significant changes" to methodology. GE appreciates the opportunity to participate in the review and to present our comments. If you have any questions, please contact me on (910) 675-5889.

Sincerely,

GE NUCLEAR ENERGY



R. J. Reda, Manager  
Fuels and Facility Licensing

cc: Laurence I. Kopp, NRC  
P. Hecht  
S. P. Congdon  
J. F. Klapproth

Southern Nuclear Operating Company  
Post Office Box 1295  
Birmingham, Alabama 35201  
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Southern Nuclear Operating Company  
*the southern electric system*

Dave Morey  
Vice President  
Farley Project

December 8, 1995

10

Docke Nos. 50-348  
50-364

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Comments on  
"Proposed Generic Communication; Licensee Qualification for Performing Safety  
Analyses"  
(60 Federal Register 54712 dated October 25, 1995)

Dear Sir:

Southern Nuclear Operating Company (Southern Nuclear) has reviewed the proposed Supplement 1 to Generic Letter 83-11, "Licensee Qualification for Performing Safety Analyses," published in the Federal Register on October 25, 1995. In accordance with request for comments, Southern Nuclear is in total agreement with the NEI comments which are to be provided to the NRC. In particular, Southern Nuclear supports the concept of eliminating the need for detailed licensee qualification topical reports to demonstrate their ability to perform safety analyses using NRC-approved methods and codes. This process is resource intensive and unnecessary as well as redundant. Adoption of the alternative guidelines in the proposed supplement will reduce this burden to the licensees as well as the Staff which would allow more time to concentrate on issues of significant safety value. Additionally, GE Nuclear Energy and Westinghouse are providing comments on this document which we believe to be appropriate and beneficial.

Should you have any questions, please advise.

Respectfully submitted,

Dave Morey

DNM/JDB

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U. S. Nuclear Regulatory Commission

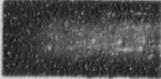
Page Two

cc: Southern Nuclear Operating Company  
R. D. Hill, Plant Manager

U. S. Nuclear Regulatory Commission, Washington, DC  
B. L. Siegel, Licensing Project Manager, NRR

U. S. Nuclear Regulatory Commission, Region II  
S. D. Ebnetter, Regional Administrator  
T. M. Ross, Senior Resident Inspector

11


**Nuclear**

**GPU Nuclear Corporation**  
 One Upper Pond Road  
 Parsippany, New Jersey 07054  
 201-316-7000  
 TELEX 136-482  
 Writer's Direct Dial Number:

(201) 316-7334

December 11, 1995  
 6700-95-2171

Chief, Rules Review and Directives Branch  
 U. S. Nuclear Regulatory Commission  
 Mail Stop T-6D-69  
 Washington, DC 20555-0001

Dear Sir:

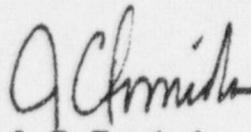
**Subject:** Draft NRC Generic Letter (GL) 83-11, Supplement 1 "Licensee Qualification for Performing Safety Analyses"

The commission published the subject draft generic letter supplement in the Federal Register on October 25, 1995 concerning licensee qualification for performing their own safety analyses.

GPU Nuclear respectfully submits the enclosed comments based on our review of the draft generic letter supplement, as well as comments in response to the questions identified in the Federal Register (FR 54712) concerning acceptance of new or revised licensee or vendor analysis methods.

On behalf of the commercial nuclear industry, Nuclear Energy Institute (NEI) is providing comments on the draft generic letter supplement. GPU Nuclear reviewed and fully endorses the NEI comments and supports this NRC initiative to conserve NRC and licensee resources. We believe that the NRC initiative to allow implementation of the Core Operating Limits Report has substantially conserved NRC and licensee resources and that the draft GL 83-11, Supplement 1 guidance will provide similar efficiencies in this area.

Sincerely,



J. F. Fornicola  
 Director, Planning & Regulatory Affairs

Enclosure  
 DJD/plp

c: NEI

~~9512150246~~ 4pp

ENCLOSUREGPU NUCLEAR COMMENTS ON FEDERAL REGISTER (FR 54712)  
QUESTIONS CONCERNING ACCEPTANCE OF NEW OR REVISED  
LICENSEE OR VENDOR ANALYSIS METHODS

1. To what extent can an organization other than the NRC (a third party) review a new methodology or a significant change to an existing methodology?

Comment:

We would suggest that a list of authorized third party reviewers be issued by NRC if this concept is implemented, in order to avoid potential re-reviews. Selected independent, third party reviewers could certainly perform qualified technical and safety reviews of new methods or significant changes to existing methods and provide the results of such reviews to the NRC. Reviews of such changes may be completed sooner, however, use of third party reviewers in lieu of NRC review would most likely not result in any licensee resource savings.

It would also seem appropriate to identify existing codes and methodologies that have been developed by national laboratories (such as LANL, INEL, Sandia, etc.) for the NRC, that can be considered as NRC approved codes and methods.

Guidance or criteria to determine if a change to an approved code or method is significant or not would be of value for defining when NRC prior approval would be required.

- a. Third party reviewers should have demonstrated expertise in core reload design, nuclear criticality and thermal/hydraulic analysis, and design basis accident analysis.
- b. The safety significance of not having NRC perform the review would be negligible, as long as qualified, independent reviewers were identified and selected.
- c. The third party reviewer should produce a safety evaluation report (SER) which would document the basis for acceptance of a new method or a significant change to an existing method, and identify any criteria or prerequisites to its use. This SER would then be provided to NRC for information and use, and to licensees for use. The licensee, upon use of a new method or significant change to an existing method, could identify by reference in Technical Specifications or Core Operating Limits Report (COLR) that a new or revised approved methodology is being utilized.
- d. See "c" above.

Enclosure  
Page 2

- e. Approved analysis methods to be referenced in the Technical Specifications or COLR could be listed directly in these documents as presently done. New or revised references, if approved by NRC or a qualified third party, could be incorporated into the Technical Specifications via an amendment request from the licensee, or incorporated into the COLR by the 10 CFR 50.59 process. The COLR is submitted to NRC for information and use upon issuance. Thus, NRC would be notified of the use of a new or revised analysis methods.
  - f. The requirements of draft GL 83-11, Supplement 1, Sections 2.2, 2.3, 2.4, and 2.5 should be auditable by NRC. The licensee's 10 CFR 50.59 evaluations supporting use of a new or revised method would be available for NRC review, as well as the evaluations and analyses supporting a specific reload effort.
2. What other viable approaches can be used for accepting new or revised methods?
- a. The development of a standard review plan type of review criteria would establish a uniform set of criteria and requirements for acceptance of new or revised codes and methods. We do not believe a new regulatory guide would be needed to support implementation of the above aspects regarding use of new or revised codes or methodologies. The regulatory process would be essentially identical to the process presently in place for the COLR.
  - b. We believe the proposed criteria as stated would apply to new or revised methods.
3. To what technical disciplines should this process apply?

This process involves the following technical disciplines:

- Nuclear Fuel - fabrication and fuel design
- Safety Analysis
- Thermal-Hydraulic/Criticality Analysis
- Nuclear Licensing

We believe that the GL 83-11, Supplement 1 should specify that this guidance applies to core reload analyses as well as plant safety analyses.

Enclosure

Page 3

GPU NUCLEAR COMMENTS ON DRAFT GENERIC LETTER 83-11. SUPPLEMENT 1

1. Proposed GL 83-11, Supplement 1, Section 2.1, "Eligibility." It would seem appropriate to identify existing codes and methodologies that have been developed by national laboratories (LANL, INEL, Sandia, etc.) for the NRC, that can presently be considered as NRC approved codes and methods.
  
2. We suggest that terms such as codes, methods, and applications be clearly defined since they can be interpreted differently, especially in scope of meaning.

November 21, 1995  
RAC:95:145

Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
Mail Stop T-6D-69  
Washington, D.C. 20555-0001

Dear Sir:

**Comments on Proposed Generic Communication: Licensee Qualification for Performing Safety Analyses**

Reference: Federal Register, Vol. 60, No. 206, "Proposed Generic Communication: Licensee Qualification for Performing Safety Analyses," Wed., October 25, 1995, pp. 54712-54713.

Siemens Power Corporation supports the approaches described in the referenced proposed generic communication. Currently, when licensees adopt a previously approved methodology, either from EPRI or a vendor, the NRC review requires additional NRC and licensee resources to support the review. Because of the priority of these reviews and the shrinking resources, both in the industry and at the NRC, the time to acceptance may be long. This delay prevents the licensee from using the methods which are beneficial to an understanding of the behavior of the plant. Also, these reviews are to demonstrate that the licensee can use the methods appropriately. The safety significance, consistent with the review priority, is much smaller than many other issues facing the industry and the NRC. Therefore, the diversion of industry and NRC resources may actually hurt the resolution of these more safety significant issues, because both the industry and NRC resources are limited. Having guidelines established to assure the valid and controlled application of the approved methods, addresses the issue about the user capability. The audit requirement for these qualification records provides the documentation that the guidelines have been properly implemented. With these guidelines in place, an additional NRC review of the capability, as is currently done, has marginal benefit and because of the resource diversion, may actually have a negative benefit.

Siemens Power Corporation also supports the use of modified procedures for reducing the review resources required for the acceptance of new or revised licensee or vendor analysis methods. The neutronic and safety analysis methodologies are well established and understood. The new and revised methodologies are primarily focussed at using more sophisticated calculations consistent with the improved computer capabilities that were not available when the codes and methods were originally developed. For instance, the newer

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safety codes have multi-dimensional capabilities. However, the basic correlations continue to be used. Similarly, the newer neutronics methodologies continue to use nodal expansion methods, but these methods have been extended to multi-dimensional capabilities, again to take advantage of the computer capabilities. By using the more sophisticated methods, the approximations and empirical corrections to account for the lack of computing capability are reduced. This reduction is important to appropriately evaluate the more complicated neutronic designs and to evaluate operation and transients that were not originally envisioned. With the current review procedures, the incorporation of the more sophisticated analytical capabilities is delayed. These more sophisticated methods generally improve the accuracy and reliability of the evaluations. The delay forces the plant licensing analyses to be performed with less than state-of-the-art techniques.

There were some specific comment requests in the referenced notice. Our responses to these comments are:

1. "To what extent can an organization other than the NRC (a third party) review a new methodology or a significant change to an existing methodology?"

Currently for a large number of the code and methodology reviews, the NRC uses contracts with technical experts to provide a review of the technical adequacy of the proposed methods. This review is limited to the technical adequacy, the regulatory issues are retained by the NRC and addressed in the safety evaluation which uses the technical evaluation as input. Thus the use of a third party for a review of the technical adequacy of a submittal has been previously established. The modification for the submitter to include the third party technical review would be beneficial for both the NRC and the applicant. For the NRC, the resources required for the review would be to address the regulatory issues, using the independent technical review as input, analogous to today's process of using the technical evaluation report as input to the safety evaluation report. The NRC resources to establish and follow the technical review contracts would not be needed. Also, the NRC turnaround time would be reduced because the independent technical review would be completed when the NRC received the topical report. The industry would benefit because the cost of the review and the schedule for the review then becomes part of the program to develop the submittal and can be adjusted consistent with the submitter's needs.

- a. "What capabilities should be required of a third party reviewer?"

The third party reviewer should be knowledgeable in the technical area of review and independent of the utility or vendors. The reviewers used by the NRC, currently, to perform the technical reviews would be a good starting list of potential third party reviewers. One possible approach would be for the NRC to establish a list of qualified third party reviewers that the submitter could arrange the review with. Additional reviewers on the list could be added by the NRC, or by NRC approval of a request from a reviewer directly to the NRC, or from NRC

approval of a reviewer nominated by the submitter. The NRC acceptance of a third party reviewer should be based on both the technical competence and the independence.

b. "What is the safety significance of not having the NRC perform the review?"

As stated earlier, the neutronics and safety analyses methods are mature and understood. Therefore, there is minimal safety significance in not having the NRC perform the technical review. This approach is consistent with current practices and has been demonstrated to be acceptable by the NRC's use of technical consultants. The difference between the proposed use of third party reviewers and the current practice is who establishes the contract with the third party reviewer. Having the submitter establish the contract results in a reduction in the NRC review scope, they do not have to manage the review contract, but does not result in a reduction in the control the NRC has over the acceptance. The third party review provides an input to the safety evaluation, similar to the current technical evaluation.

c. "What documentation should be submitted to the NRC by the third-party reviewer and/or by the licensee?"

For NRC reviews that include independent third party technical reviews, the suggested submittal package to the NRC should include the topical report describing the proposed method or revision and the independent review report. This independent review report could then be treated as a technical evaluation report to be used by the NRC to support their SER.

d. "What type of acceptance (e.g., a safety evaluation report) should be issued?"

For the reviews described above, a normal safety evaluation report, using the independent review as input is suggested. As will be presented in the response to Question 2, alternative approaches may be available for some specific modifications that can rely on previously approved criteria or benchmark cases such that an additional NRC review is not required, and the documentation package would then be submitted to the NRC for information only. Then no additional NRC acceptance documentation would be required.

e. "How would approved references (e.g., Core Operating Limits Report (COLR) parameters in technical specification reporting requirements be handled?"

With the SER for the modifications with supporting third party reviews, the documentation for the COLR could continue in the same manner as is currently used. An (A) version of the report would be available to be referenced in the Technical Specification. With the cases where additional NRC review is not required, the NRC approval of the criteria or benchmark procedure could be referenced in the Technical Specification. The COLR could then contain this reference and the additional plant specific analysis reference. This COLR is submitted to the NRC for information, as is done currently, and is also a public document, as it is currently.

f. "What information, if any, should be available for NRC audit?"

Currently, the design development notebooks, benchmark notebooks, plant analyses, QA requirements and compliance, and topical reports are available for NRC audit. This should be unchanged. Additionally, the third party review evaluations should be documented, consistent with the QA requirements, and be available for audit. This approach requires that the third party have a QA program consistent with the Appendix B requirements for design reviews.

2. "What other viable approaches can be used for accepting new or revised methods?"

For revisions to methodologies and codes that are not intended for margin improvements, but are technological upgrades either for robustness, ease of use, more reliance on phenomenological behavior as opposed to simplifying approximations, etc., an alternative approach would be to establish an approved series of test cases or goodness of prediction requirements. Thus, if the vendor or licensee wanted to implement a revision to an existing methodology or code, or introduce a new code, the comparisons to these standards could be performed and documented consistent with the QA requirements. These comparisons would be available for audit. A topical report describing the change could then be submitted to the NRC for information, but no additional review would be required. The COLR documentation requirements would be satisfied by referencing the approved standards in the technical specifications. An example of this approach is the generic mechanical design criteria currently being used by some of the fuel vendors. This approach allows the mechanical design calculations to be done with approved codes, to approved criteria. If these criteria are satisfied, the NRC is informed of the changes, but no additional review is required. The documentation supporting the design changes is available for NRC audit. Because the neutronic and safety analysis methodology is mature, the nature of the evaluations is understood. Goodness of fit criteria for example on the uncertainties for the neutronic codes would provide the assurance that the code and methods are appropriate.

a. "Should a regulatory guide be developed?"

An additional regulatory guide is not needed. The guidance already exists for the type of evaluations that need to be performed and the general standards of acceptability. With the current process of review, the time delay restricts the use of state-of-the-art analysis techniques to demonstrate compliance with these standards.

b. "Can a set of criteria, as proposed in the generic letter supplement for previously approved generic methods, also be developed for new methods?"

Because of the long experience with safety and neutronic analyses, the information exists to establish criteria and establish test cases. These cases can include previously accepted plant analyses as well as test information. The criteria for acceptance is also known because of the

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Chief, Rules Review and Directives Branch  
November 21, 1995  
Page 5

RAC:95:145

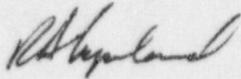
long experience supporting operating plants. The specific benchmarks and criteria would probably have to be established based on the type of evaluation, e.g., neutronic, non-LOCA BWR transient, non-LOCA PWR transient, etc. The criteria may be able to be developed generically for the industry in the long term. In the short term, each vendor can develop criteria appropriate for the specific evaluation for NRC review.

3. "To what technical disciplines should this process apply?"

The fuel, core, and cycle design methods, with the exception of the loss of coolant accident methodologies, can use the modified review approaches described in this letter. These methods are used to perform the evaluations described in Chapter 4 and Chapter 15 of the Standard Review Plan (NUREG-0800).

If you have any questions, or if I can be of further assistance, please call me at (509) 375-8290.

Very truly yours,



R. A. Copeland, Manager  
Product Licensing

/smg

cc: Mr. L. I. Kopp (USNRC)

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13

December 21, 1995

Chief, Rules Review and Directives Branch  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001



VIRGINIA POWER

Serial No. GL 95-069  
NL&P/MAE R1

Dear Sir:

**PROPOSED GENERIC LETTER 83-11, SUPPLEMENT 1**  
**LICENSEE QUALIFICATION FOR PERFORMING SAFETY ANALYSES**

In the October 25, 1995 Federal Register, the NRC announced that it is proposing to issue Generic Letter 83-11, Supplement 1. This proposed generic letter supplement notifies licensees and applicants of modifications to the Office of Nuclear Reactor Regulation practice regarding licensee qualification for performing their own safety analyses.

In addition to the proposed supplement, the NRC staff is also investigating modified procedures for reducing the resource effort for acceptance of new or revised licensee or vendor analysis methods. Comments on this as well as the proposed supplement are provided in Attachment 1.

Virginia Power encourages the NRC's efforts to solicit industry advice and recommendations.

If you have any questions, please contact us.

Very truly yours,

R. F. Saunders

Attachment

cc: Mr. Jim Eaton  
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Attachment 1  
Comments on Proposed Generic Letter Supplement  
and Additional Staff Questions

Response to Proposed Generic Letter Supplement

Virginia Power endorses the concept of eliminating a licensee qualification topical report for performing core reload and related safety analyses. We believe that the proposed guidelines offer the potential for significantly reducing NRC and utility resources without impacting the quality of the analysis tools used by the industry. Based on our past experience, the total calendar time reduction for bringing a new analytical method into production could be as much as 2 years.

Virginia Power recognizes that the proposed approach in no way reduces the need for the company to demonstrate the capability to properly use such analysis tools, and that the level of documentation and qualification performed under existing quality assurance program requirements will remain substantially unchanged.

Response to Additional Staff Questions in FR Vol 60, No 206

We offer the following comments with respect to third party review of new or revised analytical methods. In contrast to NEI's December 11, 1995 comments on this issue, Virginia Power believes that generic criteria can be developed for the analytical methods development process which would eliminate the need for prior NRC approval or third party review of new or revised methods in most cases. We base this on several years of company experience with the development and maintenance of engineering software for internal company use. The generic criteria could be documented in a regulatory guide or other suitable NRC guidance document.

Virginia Power maintains a full complement of reactor physics analysis software for use in reload core design, safety, core follow and economics analysis, for example. We also maintain our own analytical methods in the area of reactor system and core thermal hydraulics, and have amassed considerable experience in the application of NRC-approved Westinghouse technology for large and small break loss of coolant accident analysis.

In the *Description of Circumstances* section of the proposed Supplement, the Staff comments that the qualification of the user in modeling and applying an analytical method is often as significant to the overall quality of a safety analysis as the software/method itself. Virginia Power agrees with this observation. Given this, a consistency in the treatment of methods development and user qualification documentation seems appropriate.

We believe the elements of an acceptable methods development process include the following:

- 1) Development Standards- computer codes should be developed using 'higher level' programming languages (e.g., FORTRAN, C, BASIC) that:
  - are compilable
  - allow structured programming
  - conform closely to an available ANSI standard for the language
  
- 2) Validation Standards- Analytical methods should be validated, and such validation should be documented. Validation should:
  - a. ensure that the coding correctly represents the intended design and that the design correctly represents any mathematical models that are required by the design specifications.
  
  - b. demonstrate that the code (and by inference, the mathematical models) provide an adequate representation of all modeled natural phenomena.
  
  - c. include inspection of benchmark test output, and, as applicable, comparison of that output with
    - the results of hand calculations,
    - the results of other proven computer codes, or
    - measured data
  
  - d. provide a quantification of the code uncertainties and a defined approach for reflecting these uncertainties in safety related applications of the code
  
- 3) Documentation Standards - Software documentation should include:
  - a. a clear definition of the objective, a summary of the results and a statement of the conclusion of the development process.
  - b. any reference material and background information pertinent to the basis of the analytical method.
  - c. assumptions made during the course of the development process

3) Documentation Standards (CONT)

- d. a summary of each development step, including the values of significant parameters and documentation of all engineering calculations to produce, input data, equations, correlations and curve fits.
- e. results of cases used to benchmark and/or verify the method
- f. a code manual

All documentation should be prepared, reviewed, approved, stored and maintained in accordance with the applicable requirements of 10 CFR 50 Appendix B.

- 4) Security Standards - Standards should be in place which ensure that the source coding for approved software cannot be altered inadvertently or surreptitiously.
- 5) Maintenance Standards - Written policies and procedures should be in place which govern code error/problem reporting and code change notification.
- 6) Safety Assessment Standards - application of the new or revised analytical method to operation of a licensed facility should be reviewed in accordance with the requirements of 10 CFR 50.59. Assessments of event consequences and margin of safety should include consideration of the effects of quantified code uncertainties (see 2.d, above).

All relevant procedures and documentation pertinent to safety related methods development would, of course, be maintained in accordance with the requirements of 10 CFR 50 Appendix B and be subject to NRC review and audit on an as-needed basis. As a result, Virginia Power does not believe that additional, third-party review is necessary if a methods development program containing elements similar to those cited above are in place.

With respect to treatment of references to new methods in the Core Operating Limits Report (COLR), Virginia Power recommends that the methodology references be relocated from the Technical Specifications and made part of the COLR itself. New or revised references in the COLR could be clearly delineated to identify to the staff that the utility has implemented a methodology change.