May 13, 1986

MEMORANDUM FOR: All NRR Employees

FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

SUBJECT: NRR OFFICE LETTER NO. 39, REVISION 3 - NRR PROCEDURES FOR CONTROL AND REVIEW OF GENERIC REQUIREMENTS

This revised office letter supersedes the January 13, 1984 version (Revision 2) of NRC Office Letter No. 39. In this version the letter and enclosure have been generally updated and specific changes were made to:

(a) Accommodate the NRR reorganization

(b) Incorporate the procedures for forwarding CRGR documents and decision making documents that are before the Commission to the Public Document Room (PDR) in accordance with a memorandum from the Executive Director for Operations (W. Dircks) dated March 29, 1984.

(c) Incorporate procedures for preparation for CRGR meetings when the subject being considered has not been originated in NRR and a NRR position is relevant to its disposition in accordance with a memorandum from the NRR Director (H. Denton) dated October 4, 1985 (see Section B of the enclosure)

The Commission approved the Charter of the Committee to Review Generic Requirements (CRGR) on June 16, 1982. The CRGR has been constituted to review generic requirements proposed by the NRC. NRR will interface with CRGR to transmit new generic requirements proposed by NRR and to support generic requirements prepared by other NRC offices. This Office Letter sets forth the procedures to be followed by NRR personnel to control the communication of generic requirements to the industry and obtain CRGR review of new generic requirements and changes in existing generic requirements.

The lead Division within NRR for the particular proposed generic requirement is responsible for ensuring that a complete CRGR submittal package has been prepared, including the proposed generic action as it would be sent out to licensees/applicants and associated regulatory analysis, and that sufficient time has been budgeted for a thorough internal review as called for in this procedure.

The lead Division Director is responsible for presenting the proposed requirement and the supporting bases. Attendance at CRGR meetings will be established by the lead Division Director and coordinated with the Technical and Operations Support Branch of PPAS.

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All substantive written communications from NRR to CRGR will be signed by the Office Director. However, continued exchange of technical information between the NRR and DEDROGR staffs is encouraged. Such technical interchange may include discussion of facts and analyses but should not attempt to prejudge or resolve issues, or substitute for the procedure in Office Letter 16. Since the Technical and Operations Support Branch of PPAS will be coordinating with CRGR, it is important to keep the Technical and Operations Support Branch advised in writing of technical discussions with the DEDROGR staff which result in a schedule change and/or redirection of technical effort.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosure:
NRR Procedures for Processing
Proposed Generic Requirements

cc: w/encl.
V. Stello, Jr.
R. Minogue
J. Taylor
J. Davis

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DATE	02/25/86*	02/26/86*	03/06/86*	03/17/86*	04/2/86	05/13/86	05/13/86

*Previous concurrence on file w/SPEB.

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ENCLOSURE

NRR PROCEDURES FOR PROCESSING PROPOSED GENERIC REQUIREMENTS

A. PROCEDURES FOR PROCESSING GENERIC REQUIREMENTS PROPOSED BY NRR

I. INTRODUCTION AND SCOPE

All significant actions proposed to be implemented upon a class of nuclear power plants, licensees, or applicants are required to be reviewed by the Committee to Review Generic Requirements (CRGR). Such actions are defined by this procedure as follows:

(1) All proposed generic requirements (Table I attached) shall be submitted for CRGR review.

(2) All documents, letters and communications that establish, reflect or interpret NRC staff positions or requirements (Table II attached) shall be submitted for review by CRGR unless these documents refer only to requirements approved prior to November 12, 1981. In the latter case, the previously approved requirement should be specifically cited and accurately stated. Divisions should be careful to review new or specific interpretations to assure that they are only case-specific applications of existing requirements rather than initial applications having potential generic use.

(3) For all other communications with licensees (Table III, attached), no statements shall be used that might suggest new or revised generic requirements, staff positions, guidance or recommendations (unless such statements have been approved by the EDO or the Commission).

(4) The above list is not meant to be all inclusive. These procedures apply to other circumstances in which the staff may wish to communicate changes in requirements indirectly to licensees (e.g., plant specific letters or Safety Evaluation Reports that contain actions that the staff intends to apply to other licensees.) The procedures apply regardless of whether the item represents a new requirement, removal of a requirement, an increase or a decrease in the nature or impact of a requirement, or a change in prior understandings of the staff position.

(5) These procedures are not intended to apply to actions that solicit truly voluntary responses, such as requests for voluntary industry review and/or input to value/impact analyses for proposed new requirements. Also, CRGR review is not required

for matters that are purely administrative and are determined by the Director, NRR, to involve only a trivial burden, or generic communications which are truly sent to simply promulgate information (e.g., meetings notices, etc.).

For those items of paragraph (2) and (3) above, the cognizant NRR Project Manager should be consulted to independently assess the compliance with this procedure. The Project Manager should initiate and monitor actions to resolve disputed issues through appropriate management levels. Actions that implement previously approved requirements or guidance also need not be reviewed by CRGR. However, all such revisions to the Standard Review Plan (i.e., Category I) will be sent to the CRGR noting that the revision will be issued within a stated period unless CRGR disagrees.

(6) For those rare instances where it is judged that an emergency action is needed to protect the health and safety of the public, no review by the CRGR is necessary. However, the DEDROGR, who is Chairman of the CRGR, should be notified by the Office originating the action. These emergency action requirements will be reported to the Commission.

II. CONTENT OF THE GENERIC REQUIREMENTS REVIEW PACKAGE

The NRR lead division--the originator of the proposed requirement--will prepare a forwarding memorandum and necessary attachments.

The forwarding memorandum will identify the proposed requirements as one of the following:

Emergency Action - Actions that are immediately needed to protect the health and safety of the public.

Category 1 Actions that are required to overcome a safety problem requiring prompt resolution or to comply with a legal requirement for immediate or near-term compliance.

Category 2 - Actions that do not meet the criteria for designation as Emergency or Category 1.

A brief statement that explains the basis for the categorization will also be provided. For actions identified as Emergency Actions, no review by the CRGR prior to implementation is required and the emergency action is only reported to the CRGR for its information. For proposed actions identified as Category I, the CRGR should be requested to complete its review and provide recommendations within two working days. For Category 2 requirements, the CRGR should be requested to complete its review and provide recommendations according to a schedule stated in the forwarding memorandum. A short explanation of the basis for the stated schedule should be provided. Absent good reason for a shorter or longer schedule, 2 weeks should be allowed for CRGR review (after completion of internal NRR review).

Fifteen copies of the following will be attached to the memorandum:

1. The proposed Category 1 or Category 2 generic actions or the issued Emergency Actions. If not included as part of the action paper, the implementation schedule and method for each category of facilities (e.g., PWR, BWR, operating reactors, OL or CP applicant, CP holder) or licensees should be provided.

2. Draft staff papers or other underlying staff documents supporting the requirements. (A copy of all materials referenced in the document shall be made available upon request to the DEDROGR staff. Any Committee member may request DEDROGR staff to obtain a copy of any referenced material for their use.)

3. A brief description of each of the anticipated steps that licensees must carry out in order to complete the requirements; e.g.,

   3.1 Are there separate short-term and long-term requirements?

   3.2 Is it the definitive, comprehensive position on the subject or is it the first of a series of requirements to be issued in the future?

   3.3 How does this requirement affect other requirements? Does this requirement mean that other items, systems, or prior analyses need to be reassessed?

   3.4 Is it only computation? Or does it require or may it entail engineering design of a new system or modification of any existing systems?

   3.5 What plant conditions are needed to install a new component or system, conduct preoperational tests and declare it operable?

   3.6 Is plant shutdown necessary? How Long?

   3.7 Does the design need NRC approval?

   3.8 Does it require new equipment? Is it available for purchase in sufficient quantity by all affected or must such equipment be designed? What is the lead time for availability?

   3.9 May it be used upon installation or does it need staff approval before use? Does it need tech. spec. changes before use?

4. Identification of the category of reactors to which the generic requirement is to apply (that is, whether it is to apply to new plants only, new OLs only, OLs after a certain date, OLs before a certain date, all OLs, all plants under construction, all plants, all water reactors, all PWRs only, some vendor types, some vintage types such as BWR 6 and 4, jet pump and nonjet pump plants, etc.).

5. The following information for each category of reactor.

   5.1 A regulatory analysis prepared in accordance with Office Letter No. 16 which implements the Regulatory Analysis Guidelines issued by the EDO. The scope of the regulatory analysis should be in proportion to the safety significance of the regulatory action being addressed, the complexity of the issues, and how readily the benefits and detriments of the proposed action can be quantified.

   Pursuant to the EDO's directive, the regulatory analysis is less comprehensive for generic actions which are not major rulemaking. The extent to which costs and benefits should be addressed for alternatives is to be determined by the Office Director. The regulatory analysis should contain the following information as appropriate:

   5.1.1 The technical basis of the proposed generic action.

   5.1.2 A risk reduction assessment performed using a data base and methodology commonly accepted within NRC.

   5.1.3 An assessment of costs to NRC, an assessment of costs to licensees, including resulting occupational dose increase or decrease, added plant and operational complexity, and total financial costs.

   5.2 Other information* as indicated below:

   To the extent that the category contains plants of different types or vintages, the items listed below shall be provided for each type and vintage, or justification shall be provided demonstrating that the analysis of each item is valid for all types and vintages covered.

* Information regarding schedules and priorities should be formulated by the sponsoring division in consultation with the licensing divisions, PPAS and/or DSRO as appropriate.

5.2.1 The basis for requiring or permitting implementation by a given date or a particular schedule.

5.2.2 Other acceptable implementation schedules and the basis therefore. This should include sufficient information to demonstrate that the schedules are realistic and provide sufficient time for in-depth engineering, evaluation, design procurement, installation, testing, development of operating procedures, and training of operators.

5.2.3 A schedule for staff actions involved in completion of the requirement (based on hypothesized effective date of approval).

5.2.4 An implementation priority for the proposed item established by the sponsoring division (with DSRO assistance if necessary) based on information developed in the value-impact analysis and using a methodology consistent with that used in prioritizing generic issues (as HIGH, MEDIUM, LOW, or DROP).

5.2.5 For proposed requirements involving reports and/or record keeping, an assessment of whether such reporting or record keeping is the best means of implementation and the appropriate degree of formality and detail to be imposed.

6. The sponsoring Office's position, for each proposed requirement, as to whether the requirement implements existing regulations or goes beyond them.

7. The proposed method of implementation, developed in consultation with OELD, along with the concurrence (and any comments) of OELD on the method proposed.

8. The OMB clearance package when required under the Paperwork Reduction Act, and a regulatory analysis sufficient to address the Regulatory Flexibility Act and Executive Order 12291.

   a. OMB clearance is required whenever information collection from ten or more persons outside the Federal Government is involved, except where public comments on proposed rules, regulatory guides, standards, etc. are being requested. The OMB requirement applies to both voluntary and mandatory information collections. The applicability of the OMB clearance requirement, special provisions for

urgent situations, and the required content of the OMB Clearance Package are described in NRR Office Letter No. 32.

b. The Regulatory Flexibility Act and the Executive Order 12291 apply to rulemaking. In general, only a negative declaration is needed to meet the requirements of the Regulatory Flexibility Act and the regulatory analysis will suffice for Executive Order 12291. However the Rules and Procedures Branch of the Division of Rules and Records of ADM should be contacted for rulemaking issues.

III. INTERNAL NRR REVIEW PROCESS

NRR will provide a thorough review of all generic requirements review packages to be sent to CRGR. This review will be implemented in two phases: (Category 1 actions may receive expedited treatment).

Phase 1: Divisional Review

A draft of the generic requirements review package described in Section II, above, should be routed in parallel to the Directors of the appropriate licensing divisions, DSRO, and DHFT, as appropriate, with a copy each to PPAS and the office of Resource Management Cost Analysis Group (CAG)* at least seven weeks prior to the scheduled submission to the CRGR. Within two weeks of receipt, these divisions will concur or comment, including identification of any technical, policy, implementation, value-impact and other relevant issues for the consideration of the Director, ONRR. Two weeks is considered adequate for formal division review, since the lead division should have been informally coordinating its efforts with the other divisions prior to that time. One week is allotted for revision of the draft and identification of unresolved comments.

Phase 2: ONRR Review

The lead division will transmit the draft generic requirements review package, revised in accordance with comments received, including discussion of any unresolved comments, to the Director, NRR, four weeks prior to the scheduled submission to the CRGR.

Generally, the Director, NRR, will schedule a dry run of the CRGR presentation and discussion of any outstanding issues. PPAS will formally schedule a meeting with the CRGR once the Director, NRR, has approved the generic action package.

Following receipt of any comments or instructions from the Director, NRR, the lead division will revise the package and finalize the forwarding memorandum to CRGR for the signature of the Director, NRR. The transmittal will include the concurrences or divergent views of appropriate NRR divisions, other NRC technical Offices, OELD and DSRO.

* NRR Office Letter 16, Enclosure 4, describes the level of support available through the CAG and their review authority.

The lead division is responsible for insuring that this internal review process is completed. It will be responsible for the timely preparation of the generic requirements review package; the conduct of an internal NRR review in accordance with this Office Letter; arranging that the views of other appropriate NRC offices are presented to the Director, NRR and the CRGR; and assuring the package is forwarded to CRGR in a timely manner.

Phase 3: CRGR Review

In general, the Director of the lead Division is expected to present the proposed requirement before CRGR. NRR attendance at these meetings should be kept to a minimum and in general be limited to the presentor and those technical experts whose knowledge is considered vital to the meeting.

The Technical and Operations Support Branch of PPAS will coordinate attendance at CRGR meetings to insure that only necessary NRR personnel are at meetings with CRGR.

Phase 4: Re-Review After Public Comment (if applicable)

NRC has made it a practice to issue significant proposed new or changed requirements or guidance for public comment before promulgation in final form. This practice applies to significant informal standards (Regulatory Guides, SRP changes, etc.) as well as formal rulemaking.

When solicitation of public comments is involved, CRGR review is required before issuance for public comments and a further submittal to CRGR for possible review will usually be required before issuance in final form.

The following procedures will apply when there has been a previous CRGR review prior to issuance for public comment and the Director, NRR, determines that a further CRGR submittal is required to be prepared in view of the public comments:

1. The lead division will prepare for the signature of the Director, NRR, a cover [illegible] to CRGR which will contain the following:

   a. Reference to the previous CRGR review.

   b. A concise characterization of the extent, nature, and significance of the public comments and of the changes, if any, made in the proposed requirement.

   c. A statement, with reasons given, requesting CRGR re-review or expressing the view that there is no need for re-review. Re-review should be requested when important changes have been made. It should also be requested when no major changes have been made but the public comments indicated

major knowledgeable controversy. (It should be noted that this NRR statement as to the need for re-review is not binding on the CRGR. Rather, it is intended to assist the Committee in its decision as to whether to take or decline re-review.)

2. The lead division will update the previous CRGR submittal. This update will vary according to circumstances and will include such of the following as circumstances warrant:

   a. The requirement (rule, Regulatory Guide, Standard Technical Specification, etc.) in its proposed final form, including any accompanying statement of considerations; or a statement that the requirement has not changed.

   b. Overview of the public comments and their disposition, if and to the extent needed to supplement what is contained in item 1b and item 2a, above.

   c. Update of the regulatory analysis (Section II, above). The required scope of this update depends on the nature and extent of changes in the proposed requirement or its rationale, as follows:

      (i) When there has been no change or no significant changes and the previous analysis is still applicable without significant change, then a statement to that effect is sufficient.

      (ii) When changes are limited, there should be a supplement to the previous submittal adding the new information or modifying affected portions of the previous submittal.

      (iii) A complete re-analysis should be prepared only if the changes are so substantial and extensive as to require it.

3. Except as provided under paragraphs 1 and 2, above, the procedures for original reviews apply to re-reviews.

IV. FEEDBACK AND CLOSURE ON CRGR REVIEWS

1. The office of the Director, NRR, will distribute the CRGR minutes to all Division Directors upon receipt.

2. Within two working days of receipt of the CRGR minutes, the lead Division Director of the subject generic issue will:

- assess the CRGR recommendation, identifying areas of potential disagreement,

- identify office options vis-a-vis CRGR recommendations including the estimated resource and schedule impact of these options,

- consult with other affected NRR divisions (though no attempt need be made to obtain concurrences), and

- schedule and meet with the Director, NRR, (and other affected Division Directors) for a decision on the appropriate course of action on the generic issue.

3. Within four working days of receipt of the CRGR minutes, the lead Division Director will prepare a memorandum from the Director of NRR either to CRGR concurring in the CRGR comments or to the EDO (with copy to DEDROGR) indicating office disagreement with the CRGR decision and the rationale for the disagreement.

4. The lead division will follow through to assure completion of the appropriate regulatory action, such as processing a Standard Review Plan change in accordance with NRR Office Letter No. 2 or a Standard Technical Specification change in accordance with NRR Office Letter No. 38.

5. The lead division will also assure that all documents related to the decision to issue proposed orders, generic letters, new or revised Standard Review Plan sections, Regulatory Guides or Standard Technical Specifications or other proposed requirements or guidance by the Commission on a public forum are forwarded to the Public Document Room at the same time as the proposal is issued for public comment or in final form. These documents generally include (but are not limited to) the memorandum requesting CRGR review and any correspondence related to the review of the proposal, including the minutes of the CRGR meetings, and the NRR memorandum responding to the CRGR recommendations. Documents related to rules and other matters that are to be addressed by the Commission in a public forum will be forwarded to the PDR by the DEDROGR staff, but the lead division should coordinate with them to assure that the appropriate documents are forwarded to the PDR when the matter is addressed in a public forum. Specifically, an advance copy of the appropriate documents should be sent to the Chief, Public Document Room for display, with an indication that the official copy will be forwarded via the Document Control System (DCS). At the same time, the official file copy should be sent to the Chief, Central Files for entry into the DCS.

V. GUIDANCE

The lead division will identify what other support is required and, with the concurrence of the other divisions, assign tasks and establish schedules such that the completion of the generic action, the value-impact analysis and the OMB clearance package are coordinated. DSRO will provide guidance on the methods used in preparing a value-impact analysis.

Guidance regarding the timing of ACRS reviews of proposed generic issue actions is provided in the Memorandum of Understanding (MOU) between the Office of the Executive Director (EDO) and the Advisory Committee on Reactor Safeguards (ACRS), effective December 1, 1985. The MOU was provided to all NRR Division Directors, Assistant and Deputy Directors, and Branch Chiefs by memorandum from the NRR Office Director, subject "MOU Regarding ACRS Participation in NRC Development of Rules, Policy Matters, and Safety-Related Guidance," November 20, 1985.

Each specific rulemaking sponsored by an office reporting to the Executive Director for Operations (EDO) must be approved by the EDO. Until the EDO approves a proposed rulemaking action, we can not expend resources for the action and the proposed rule may not be included in the NRC Regulatory Agenda (NUREG-0936). EDO approval for a rulemaking action will be obtained through the Rulemaking Review Committee by following the "Procedures for Conducting RES Independent Review of Rulemakings" (May 1984). Questions regarding these procedures and requirements may be directed to the Safety Program Evaluation Branch, DSRO. After the EDO has initially approved a rulemaking action, it must be reviewed and reapproved by the EDO annually until the final rule is issued.

The appropriate project division(s), in coordination with DSRO, develops and maintains a prioritization of all actions that have already been issued to licensees and applicants and whose accomplishment might compete for licensee/applicant resources. The PPAS develops and maintains implementation schedules for all licensees. DSRO provides guidance on the methods to be used in determining the priority of the proposed action relative to other actions that have been issued.

The Planning and Program Analysis Staff coordinates the development of the long-range CRGR agenda, the review of the proposed transmittals to the CRGR, pre-CRGR reviews with the Office Director, scheduling of specific CRGR meetings, attendance at CRGR meetings, provisions of any requested additional information to the CRGR, and feedback and closure on CRGR reviews.

B. PROCEDURES FOR NRR ACTIONS FOR GENERIC REQUIREMENTS PROPOSED BY OTHER NRC OFFICES

I. INTRODUCTION AND SCOPE

Since NRR personnel are frequently involved with generic requirements proposed by other NRC offices, a procedure is necessary to assure NRR cognizance and approval of generic requirements proposed to CRGR by other NRC offices which will affect NRR licensing activities. The following procedures are to be used for NRR review of CRGR packages and the participation of NRR personnel in CRGR meetings for generic requirements proposed by other offices.

II. REVIEW OF GENERIC REQUIREMENTS CRGR PACKAGE

Review of CRGR packages prepared by other NRC offices will be coordinated by the DSRO. DSRO will request the assistance of other appropriate NRR divisions as needed. The CRGR package will be reviewed for conformance with the content guidelines used for NRR development of Generic Requirements Review Packages, with particular emphasis on the regulatory analysis section (see Section A.II of this procedure). DSRO will coordinate the NRR response providing comments and/or approval to the originating office.

III. PARTICIPATION OF NRR PERSONNEL IN CRGR MEETINGS

When NRR personnel are involved in the presentation and/or justification of generic requirements proposed by other NRC offices to CRGR the following procedure will be followed.

Four weeks prior to the CRGR Meeting each division director with personnel involved will provide summary information regarding the proposed generic requirements to the NRR CRGR coordinator (presently R. Hernan/PPAS). The information to be provided is indicated in Table IV, attached.

The NRR CRGR Coordinator will prepare a summary for the Deputy Director, NRR using the information provided by the division directors. Two weeks prior to the CRGR Meeting the D/D NRR will meet with the affected NRR division director and appropriate staff members. The purpose of this meeting is to air the issue and any potential areas of controversy and to select the person(s) best suited to represent NRR's position.

TABLE I

PRINCIPAL MECHANISMS USED BY NRC STAFF TO ESTABLISH OR COMMUNICATE GENERIC REQUIREMENTS

Rulemaking[1]

- Advanced Notices
- Proposed Notices
- Final Rules
- Policy Statments

Other Formal Requirements[2]

- Multiplant orders including show cause orders and confirmatory orders

Staff Requirements[3]

- Bulletins
- Circulars
- Generic Letters (including 50.54f and TMI Action Plan letters)
- Regulatory Guides
- SRP (including Branch Technical Positions)
- Standard Tech Specs
- USI NUREGs

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[1] While Rulemaking is an action of the Commission rather than the staff, most rules are proposed or prepared by the staff.

[2] The document itself imposes a legal requirement; e.g., regulatory orders license conditions.

[3] Mechanisms which reflect staff positions which, unless complied with or a satisfactory alternative offered, the staff would impose or seek to have imposed by formal requirement.

TABLE II

MECHANISMS OFTEN USED TO INTERPRET GENERIC REQUIREMENTS

Action on Petitions for Rulemaking

Action on 2.206 Requests

Approval of Topicals

Facility Licenses and Amendments

SERs

FDAs PDAs

NUREG Reports (other than USIs)

Single Plant Orders

Staff Position on Code Committees

Unresolved Issues Resulting From Inspections

TABLE III

ADDITIONAL MECHANISMS SOMETIMES USED TO COMMUNICATE GENERIC REQUIREMENTS

DES, FES

Entry, Exit & Management Meetings

NRC Operator Licensing People Contact with Licensees

Phone Calls or Site Visits by NRC Staff or Commission to Obtain Information (i.e., Corrective Actions, Schedules, Conduct Surveys, etc.)

Pleadings

Press Releases

Proposed Findings

Public Meetings, Workshops, Technical Discussions

SALP Preports (NRR Input)

SECY Papers (some utilities apparently sent operators to college based on recent SECY paper on operator qualifications)

Special Reports

Speeches to Local Groups or Industry Associations

Technical Specifications

Telephone calls and meetings with Licensees, vendors, industry representatives, owners groups

Testimony

TABLE IV

CRGR PRE-MEETING BRIEFING SUMMARY

Date/Time of CRGR Meeting:

Agenda Item:

Sponsor:

Key NRR Participants:

Desired Results:

What Problem Will This Action Solve?

Potentially Controversial Issues:

Anticipated CRGR Questions:

Date/Time of Pre-CRGR Briefing: _____

MAY 16 1986

MEMORANDUM FOR: Vic Nerses, Project Manager
PWR Project Directorate #5, PWR-A

FROM: Carl Berlinger, Chief
Reactor Systems Branch, PWR-A

SUBJECT: REPORT OF CONFERENCE CALL WITH SEABROOK STATION PERSONNEL ON APRIL 10, 1986, AND RECOMMENDED FOLLOWUP ACTIONS PERTINENT TO REACTOR COOLANT PUMP (RCP) TRIP

REFERENCE: Berlinger, Carl, "RCP Trip, Seabrook Station Units 1 and 2", NRC Memorandum to Vic Nerses, April 10, 1986.

Plant Name: Seabrook Station, Units 1 and 2
Docket Number: 50-443, 50-444
Responsible Branch: PWR Directorate #5
Project Manager: Vic Nerses
Review Branch: Reactor Systems Branch, PWR-A
Review Status: Ongoing

As you know, we briefly reviewed the submittal pertinent to Seabrook Station Units 1 and 2, and prepared preliminary comments and questions which were provided in the reference memorandum. This information served as an agenda for a telephone conference call with personnel representating the Seabrook Station. The conference call occurred on April 10, 1986. The Enclosure documents the staff understanding of the responses obtained during the conference. For completeness, all of the information contained in the reference memorandum is included in the Enclosure to eliminate the necessity of referencing the original review documentation.

We recommend that you transmit the Enclosure to this memorandum to Public Service of New Hampshire, and request that they confirm, or correct as necessary, our understanding of their comments. This should provide sufficient documented information that the RCP trip issue can be satisfactorily addressed in a Safety Evaluation Report.

Normally, you can expect a draft SER within one week of our receipt of the reply. The formal SER will follow as soon as it is reviewed and signed.

/S/

Carl Berlinger, Chief
Reactor Systems Branch, PWR-A

Enclosure: As stated

cc: C. Rossi

	RL	CHB
RSB:PWR-A	RSB:PWR-A:SL	RSB:PWR-A:BC
WLyon:lr	RLobel	CBerlinger
5/13/86	5/15/86	5/16/86

ENCLOSURE

REPORT OF CONFERENCE CALL CONCERNING REACTOR COOLANT PUMP (RCP) TRIP AT SEABROOK STATION UNITS 1 AND 2, APRIL 10, 1986

INTRODUCTION

The staff has completed a preliminary review of the Reference 1 submittal from Public Service of New Hampshire pertaining to RCP trip, and has discussed the results of the preliminary review with personnel representing the Seabrook Nuclear Station. This Enclosure documents both the preliminary review (Ref. 4) and the results of the discussion with applicant personnel.

The purpose of the review was to identify any areas where additional information was needed for the staff to complete its evaluation of RCP trip, and to provide guidance pertinent to submittal of additional information where appropriate. The telephone conference call was conducted with the purpose of obtaining clarification on several points and to obtain additional information. The call took place on April 10, 1986. The applicant was represented by Larry Walsh, Bob Kutcher, Cris Mellow, Bill Fadden, Paul Christofakis, and Tim Pucko. The staff was represented by Beth Doolittle and Warren Lyon.

This Enclosure begins with an overall guidance discussion, and then covers each of the review criteria by stating the criterion, followed by a staff summary and critique. The staff understanding of the applicant response is then given, followed by additional staff comments where appropriate.

OVERALL GUIDANCE PERTINENT TO RCP TRIP

During a small break accident in certain break size ranges, there exists a window in time during which tripping RCPs will make the accident worse. Therefore, in a small break situation, one <u>must</u> trip RCPs prior to entering the window. If one wishes to depend upon manual trip, two criteria are applicable:

1. One must show that at least 2 minutes exist within which to trip RCPs following "receipt of a trip signal" using licensing calculations as a basis.

2. One must show that at least 10 minutes exist within which to trip RCPs following "receipt of a trip signal" using best estimate calculations as a basis.

If for some reason, the RCPs have not been tripped within 10 minutes of the time at which plant conditions indicate trip should be performed, they are to be left running until after the window is closed. Closure can be indicated by parameters such as regaining both adequate subcooling margin and pressurizer level after they have been lost.

Analyses are required to establish timing relative to items 1 and 2, as well as to establish the dimensions of the window.

It is desirable to leave pumps running for control purposes during other transients and accidents, including steam generator tube rupture accidents of sizes up to one tube broken. Therefore, insofar as is practical, procedures and criteria should be developed to attain this goal. Note that leaving pumps running during "non-break" transients and accidents is not a 100% requirement, as contrasted to the small break, where trip must be accomplished to remain in compliance with the regulations. (Failure to trip as required could lead to exceeding Appendix K specified temperatures.) For these transients and accidents, RCPs may be tripped when desirable. If in doubt, the small break criteria are to be applied.

New plants coming on line should have dealt with RCP trip prior to power operation.

Note much of the work pertinent to the above criteria has been done on a generic basis, and is applicable to individual plants.

SPECIFIC EVALUATION CRITERIA AND COMMENTS

The evaluation criteria are generally those provided in Reference 2, including the Safety Evaluation and its appendices, which were an enclosure to Reference 2.

A. Determination of RCP Trip Criteria

Demonstrate and justify that proposed RCP-trip setpoints are adequate for small-break LOCAs but will not cause RCP trip for other non-LOCA transients and accidents such as SGTRs. This is to include performance of safety analyses to prove the adequacy of the setpoints.

Consider using partial or staggered RCP-trip schemes.

Staff Evaluation. The applicant has selected a subcooling margin of $30^{o}F$, independent of containment conditions, as the criterion for RCP trip.

The selection is justified by stating that the derivation of the Seabrook RCP trip parameter is in accordance with the WOG generic guidelines, and that the final subcooling value meets all the WOG generic requirements. The subcooling option was previously identified by the staff as generically acceptable, and was the second most desirable option with respect to the staff's generic review. In light of this prior staff finding, the staff requests additional information pertinent to the selection process which led to selection of subcooling margin.

Applicant Response. Evaluation of the three criteria recommended by the WOG led to a clear conclusion that subcooling more consistently represents the Reactor Coolant System condition for Seabrook, and it provides sufficient differentiation between a LOCA and Steam Generator Tube Rupture (SGTR) to serve as an RCP trip criterion. The parameter is readily available to the operator, and no operator calculations are required for its application. Subcooling is little influenced by the

instrumentation environment, and the selected value used for RCP trip is sufficiently high that environmental conditions need not be considered by the operator.

Full consideration was given to the information contained in the WOG Guidelines pertinent to RCP trip criteria (see the first section on generic issues, RCP Trip/Restart). This information is also used during operator training so that the operator will be fully aware of the need for RCP operations, as well as the response that is indicated under various conditions.

A1. Identify the instrumentation to be used to determine the RCP trip set point, including the degree of redundance of each parameter signal needed for the criterion chosen. Establish the quality level for the instrumentation, identify the basis for the sensing-instruments' design features, and identify the basis for the degree of redundance.

Staff Evaluation.

Reference 1 contains the statements: "The RCS subcooling margin is calculated based upon the wide range RCS pressure and compensated core exit thermocouple readings. The value of RCS pressure utilized in the calculation is the output of the data quality algorithm implemented in the subcooling margin monitor. The value of core exit thermocouple temperature is based upon the auctioneered high thermocouple quadrant average temperatures. Using the auctioneered high thermocouple quadrant average temperature in the calculation of core subcooling margin is consistent with the utilization in the WOG Emergency Response Guidelines.

"The Seabrook Emergency Operating Procedure Setpoint Study presents the calculations which support the actual subcooling value of 30°F. The Setpoint Study calculations were performed using pressure temperature instrumentation with the largest calculated errors. By using this approach, the operator is not restricted to a specific type of instrument

for determination of RCP trip. As an example, determination of subcooling could be made by:

- direct reading from Subcooling Margin Monitor

- direct reading from Main Plant Computer System, and

- manual calculation using steam tables and any combination of

  1) MCB pressure indication (Pressurizer or RCS pressure), and
  2) MCB temperature (incore thermocouples or RCS loop wide range RTDs)."

The referenced calculational procedure leads to subcooling margin results which are reasonable when compared to other plant results the staff has reviewed. The flexible approach provides the operator with options which can be utilized in the event that one instrument is lost. The staff requests that the specific instrumentation be identified, including the location of the connections to the RCS, the transmitters, and any other major components comprising the systems (with the exception of the core exit thermocouples, where the locations and connections are obvious). The calculational program should be described with respect to discrimination between readings of different value.

Applicant Response. The instrumentation utilized is that pertinent to the subcooling monitor. The Seabrook FSAR, Table 7.5.1, and information contained in Seabrook document SBN-952 provide redundancy location, calculational methodology, and instrumentation identification data. Individual instrumentation losses or abnormalities are automatically removed from the calculation of subcooling by auctioneering and averaging techniques.

Additional Staff Comment. The discussion revealed a clear understanding of the methodology and the background considerations pertinent to

determination of subcooling under all reasonably expected plant conditions.

A2. Identify the instrumentation uncertainties for both normal and adverse containment conditions. Describe the basis for the selection of the adverse containment parameters. Address, as appropriate, local conditions, such as fluid jets or pipe whip, which might influence instrumentation reliability.

Staff Evaluation. Temperature uncertainty for normal containment conditions is stated as 18.6 ^{o}F, and 19.6 ^{o}F is considered applicable for adverse containment conditions. Pressure uncertainty is stated to be 84.6 psi, and is considered to be independent of containment conditions because the transmitters are located outside of containment. Temperature uncertainty is stated to be based on engineering judgement concerning the response of RTDs in an adverse environment.

The staff has the following comments and questions:

1. What are the criteria which separate normal and adverse containment conditions?

2. Some of the instrumentation previously mentioned may have transmitters inside containment, such as pressurizer pressure. Is this correct? If so, how does this affect the uncertainty? Similar questions may be posed for other instrumentation, such as thermocouples, where the uncertainty determinations for RTDs would not be expected to apply. Please discuss.

3. Fluid jets and pipe whip are not mentioned. Please amplify. The concern is with respect to the real operation of the plant as opposed to the licensing approach of a single failure, and the potential impact upon operator decisions. Has the plant been reviewed with respect to fluid jets and pipe whip for this application?

4. Conditions outside of containment that may influence uncertainty are not addressed. For example, has Seabrook surveyed the wiring and connections between the transmitters and the control room to assure that such accidents as a steam line break outside of containment will not introduce problems with readings in the control room, and have such considerations been factored into the uncertainty evaluation?

5. The uncertainty determinations are stated to be based upon RTDs. The core exit T/Cs are stated to be the basis for the determination of RCP trip. Please explain the apparent discrepency. (See Item A1.)

Applicant Response. Information pertinent to each of the above items is as follows:

1. The generic WOG Guidelines are used for containment conditions. An adverse containment condition is considered to exist if a High-1 containment isolation signal is generated (4.3 psig) or if the integrated radiation dose in containment is greater than 1.4×10^7 Rads.

2. Narrow range pressurizer pressure is the only applicable instrument with a transmitter inside containment. This instrument will not be used in determining subcooling margin since it is not qualified to function in a harsh environment.

   The selected subcooling margin is sufficiently high that uncertainty variations due to an adverse containment condition are covered. The same is true with the uncertainty of instrumentation other than that automatically used in the subcooling monitor. In some cases, the uncertainty of instrumentation utilized in determination of the subcooling margin applicable to RCP trip is higher than would be the

case with alternate instrumentation. For example, the uncertainty assigned to RTDs is higher than that associated with thermocouples.

3. Studies have been performed in which affected regions have been defined in the vicinity of high energy lines. These have established that, at most, only one instrument can be affected in a redundant system. A plant walk-down is in progress (approximately 90% complete) to evaluate these topics. No problems have been identified. Further information is provided in FSAR Section 3.6.

4. The above identified walkdown applies to this question as well. Note the RCS liquid level system was carefully designed to avoid problem areas, and it is installed in protected areas. The instrumentation, including connecting lines, is located away from potential sources of an adverse environment outside containment, such as high energy lines. In addition, all Class 1E instrumentation has been evaluated for conditions which may exist outside containment.

5. See prior response on thermocouples as contrasted to RTDs.

A3. In addressing criterion selection, provide consideration of uncertainties associated with the WOG supplied analyses values. These uncertainties are to include uncertainties in computer program results and uncertainties resulting from plant specific features not representative of the generic data group.

If a licensee determines that the WOG alternative criteria are marginal for preventing unneeded RCP trip, it is recommended that a more discriminating plant-specific procedure be developed. Licensees should take credit for all equipment (instrumentation) available to the operators for which the licensee has sufficient confidence that it will be operable during the expected conditions.

Staff Evaluation. Determination and use of RCS subcooling as an RCP trip parameter is stated to have been performed in accordance with the generic guidance provided in the Revision 1 version of the Westinghouse Owners Group Emergency Response Guidelines. Please relate this to the information which the staff reviewed and generically approved in Generic Letter 85-12 (Ref. 2). For example, discuss comparisons between Seabrook and the Westinghouse Owners Group (WOG) generic information provided in response to Generic Letter 83-10 (Ref. 3), which was referenced in Reference 2. The staff needs sufficient information regarding the uncertainty of the computer code results used in performance of analyses that it can formulate conclusions in regard to initial plant condition assumptions, and the major contributors to uncertainty. Where bases are upon generic accident and transient calculations, the staff needs to understand if there are any Seabrook specific features which affect the determinations and, if so, what equipment is involved and what is the impact upon the results.

Applicant Response. All of the information identified by the staff is contained in the referenced WOG documentation. This can be condensed and provided to the staff if desired, and will be the duplicate of what has been provided by many other utilities in response to this staff question.

The uncertainties applicable to the Seabrook plant are 138 psig for RCS pressure, 58°F for subcooling, and 685 psi for pressure difference from the RCS to the SG secondary side. There are no unique Seabrook plant features that affect the generic WOG information.

Additional Staff Comment. The staff briefly identified the pertinent points in the referenced WOG documentation on which there may have been a question, and the applicant was obviously familar with the information. There is no need for the applicant to "rubber stamp" the information onto an additional response for staff review. The above provided additional plant specific information is sufficient.

B. Potential Reactor Coolant Pump Problems

B1. Assure that containment isolation, including inadvertent isolation, will not cause problems if it occurs for non-LOCA transients and accidents. Demonstrate that, if water services needed for RCP operations are terminated, they can be restored fast enough once a non-LOCA situation is confirmed to prevent seal damage or failure. Confirm that containment isolation with continued pump operation will not lead to seal or pump damage or failure.

Staff Evaluation. The RCP seals are cooled by either seal injection via the Chemical Volume and Control System (CVCS) or thermal barrier cooling via the Component Cooling Water (CCW) system. An inadvertent containment isolation is stated to only affect discharge from the seals, which is re-routed to the pressurizer relief tank. Both seal flow and CCW flow to the RCPs continue.

Seabrook states that the only credible event which would interrupt both of the cooling water sources is a loss of off-site power. This would result in de-energization of the RCPs. One of the seal cooling sources would be restored upon startup and loading of a diesel generator. Either system is stated to provide adequate seal cooling for at least two hours with loss of off-site power.

The staff has a number of comments and questions pertinent to the Seabrook response. These include:

1. The response appears to be based upon considerations applicable to FSAR transients and analyses. The concern is more properly weighted toward actual plant operation under transient and accident conditions.

2. The response addresses loss of both sources, or seal injection behavior with a loss of off site power. There are many other possibilities. For example, does Seabrook have various levels of containment isolation as is common to many Westinghouse plants, and, if so, what is the response to the various levels? Is seal

injection lost upon receipt of a Safety Injection (SI) signal due to actions such as closure of charging lines or tripping of charging pumps? Does CCW continue under all conditions of containment isolation?

3. What are the conditions under which RCP operation can be continued, and under what conditions must the RCPs be tripped?

4. What are the conditions under which RCP restart is permitted?

5. If CCW operation is terminated and later restored, what are the implications and what precautions are taken to assure the RCP components are not overstressed? Similar questions may be addressed to seal injection.

6. Information should be provided pertinent to restart of RCPs following restoration of services leading to a trip. Items such as trip parameters, operator response and timing of operations should be identified. The staff does not need a large volume of material on these topics, but does need a brief mention with perhaps reference to procedures in the list provided with the submittal.

Applicant Response. The following information is provided for each of the items:

1, 2. The time associated with loss of all RCP cooling is the time it would take for the RCP seal components to reach a temperature where there may be a temperature concern. Leakage rate would not be expected to be affected at this point. Anything approaching a large leak rate (LOCA) is not expected for longer times.

The system used for the thermal barrier coolers at Seabrook is somewhat unique, and contributes to a slow thermal response of the RCP seals due to simultaneous loss of both seal injection and CCW, provided there is still AC power to the system pumps. This occurs

because there will still be water circulated between the referenced system and the thermal barrier heat exchangers, and the water and system components contribute a significant thermal mass. Note, however, that CCW is necessary for RCP motor cooling.

The first level of containment isolation at Seabrook only affects the seal water return, which is re-routed to the PRT. The high-3 containment isolation signal terminates CCW to the RCP motor coolers, but CCW to the thermal barrier heat exchanger system and RCP seal injection are unaffected.

3. RCPs are normally not run for more than two minutes without motor cooling. There are additionally a number of trip parameters, such as bearing temperatures, seal water return rate, and seal water pressure differential, which must be met for normal RCP operation. These would be applied to most circumstances which could exist in the plant. An exception is Inadequate Core Cooling (ICC). Here, the RCPs would be restarted in accord with information provided in the WOG Rev. 1 Emergency Procedures Guidelines. Note that in general, Seabrook follows those Guidelines.

4. There are tight temperature rate limitations on reinitiation of RCP operation following a loss of all seal cooling.

5, 6. See the above.

Additional Staff Comment. The discussion clearly established that a number of plant procedures apply to the points identified by the staff, that the personnel representing Seabrook were familar with these procedures and the underlying need, and that the necessary precautions were reflected in the procedures and understanding.

B2. Identify the components required to trip the RCPs, including relays, power supplies and breakers. Assure that RCP trip, when necessary, will occur. Exclude extended RCP operation in a voided system where pump head

is more than 10% degraded unless analyses or tests can justify pump and pump-seal integrity when operating in voided systems. If necessary, as a result of the location of any critical component, include the effects of adverse containment conditions on RCP trip reliability. Describe the basis for the adverse containment parameters selected.

Staff Evaluation. The major components associated with RCP trip are identified, and their location is established as outside containment. Control power is also discussed.

A brief consideration should be given to the potential for adverse conditions outside containment and the implications, if any. For example, can a steam line break introduce difficulties with respect to the equipment of interest here?

The timing of operations associated with alternate operator actions required to trip the RCPs should be mentioned. For example, if the operator attempts a trip from the control room, and fails, what alternate procedure will be followed such as trip from an alternate location? How long will it take to trip from an alternate location, including travel time?

RCP operation in a voided system is not mentioned.

Applicant Response. All equipment is located in electrical equipment areas which do not have high energy lines.

In the event of unsuccessful operator attempts to trip RCPs from the control board, there are alternate techniques which would be applied. For example, under normal circumstances one could trip the breakers by physically walking to the breaker location. One would expect to accomplish this in less than 10 minutes (normally 5 minutes, and in a minimum of about 3 minutes). One could also shed the bus which provides power to the RCPs. There is no safety related equipment on the bus,

which also provides power to circulating water pumps and some non-vital motor control centers.

Backup procedures to accomplish these actions are not provided. Such actions are covered in operator training and are considered a normal response which follows from such training, which provides an emphasis on operator understanding of the plant responses and the neeo for taking certain mitigative actions to plant conditions.

C. Operator Training and Procedures (RCP Trip)

C1. Describe the operator training program for RCP trip. Include the general philosophy regarding the need to trip pumps versus the desire to keep pumps running. Also cover priorities for actions after engineered safety features actuation.

Assure that training and procedures provide direction for use of individual steam generators with and without operating RCPs.

Assume manual RCP trip does not occur earlier than two minutes after the RCP-trip set point is reached.

Determine the time available to the operator to trip the RCPs for the limiting cases if manual RCP trip is proposed. Best Estimate calculational procedures should be used. Most probable plant conditions should be identified and justified by the licensee, although NRC will accept conservative estimates in the absence of justifiable most probable conditions.

Justify that the time available to trip the RCPs is acceptable if it is less that the Draft ANSI Standard N660. If this is the case, then address the consequences if RCP trip is delayed. Also develop contingency procedures and make them available for the operator to use in case the RCPs are not tripped in the preferred time frame.

Staff Evaluation. The Seabrook response consists or a brief reference to training in plant specific emergency procedures and "...Seabrook Station has elected to use the reactor coolant subcooling margin as a method of providing guidance to the operator for initiating a manual trip of the RCP in the event of a small break LOCA. The low subcooling margin temperature only provides guidance and is not meant to be used alone. Before actually tripping the RCPs, the operator must also ensure that at least one CCP or SI pump is also running."

The staff does not understand these statements. For example:

1. This is the first mention of a qualifier which requires other parameters be satisfied prior to tripping RCPs. Why are these qualifiers provided? Are there any others which have not been stated? How is this description consistent with a requirement that the RCPs be tripped under LOCA conditions?

2. The staff believes that if there is no CCW, then there is no cooling to the charging pumps or to the SI pumps. Is this correct? If so, can these pumps operate without cooling? If not, given the situation of no CCW, how can there be seal injection or cooling to the RCPs? Without cooling to the RCPs, how can they continue to be run consistent with the above Seabrook statement?

A description of training and background philosophy is not presented. The staff expects this information. The staff also expects information pertinent to RCP restart. A paragraph or two is sufficient, the staff does not desire an in-depth treatment. It is sufficient to establish an understanding of the subject.

Applicant Response. The operator is expected to think and not blindly respond to plant conditions. Thus, the subcooling margin utilized for RCP trip is not an absolute, and other plant conditions may appropriately affect RCP trip. Unavailability of any makeup to the RCS represents such a case, and running RCPs as long as is reasonable is a response designed

to extend core cooling beyond what would be obtained if the RCPs were tripped under these unique and unexpected conditions. Note such actions are taken under conditions which are beyond the design basis, and which are beyond the conditions reported in the FSAR.

The staff belief that there is no cooling of the charging and SI pumps under conditions of loss of all CCW is correct. Of these pumps, only the positive displacement pump might operate for more than a few minutes without cooling, and its ability to do so has not been evaluated. (Note this pump has a capacity somewhat above 100 gpm.) See also the prior responses on RCP operation with loss of CCW and seal injection.

The previously referenced documentation is used during operator training, and provides an understanding of the need for various actions pertinent to RCP operation.

Additional Staff Comment. The staff has not reviewed the tradeoffs between operating RCPs if there is no ability to provide makeup water to the RCS as contrasted to tripping RCPs. There are logical arguments to support both positions. The staff will address this generically. Since many W plants probably have incorporated this WOG provided guidance into their emergency procedures, the present staff thinking is to accept this approach unless there is a clear need for its rejection. No such need is presently apparent.

The discussion with the applicant established that the referenced documents reflected an understanding of the background for RCP operations, and this understanding is in turn being provided to the operators as part of their training.

C2. Identify those procedures which include RCP trip related operation:

(a) RCP trip using WOG alternate criteria
(b) RCP restart

(c) Decay heat removal by natural circulation

(d) Primary system void removal

(e) Use of steam generators with and without RCPs operating

(f) RCP trip for other reasons

Ensure that emergency operating procedures exist for the timely restart of the RCPs when conditions warrant.

Staff Evaluation. Seabrook has presented a listing of selected procedures which address RCP trip. They are not identified with respect to topics (a) - (f). Are these topics included?

Applicant Response. Yes.

REFERENCES

1. DeVincentis, John, "Response to Generic Letter 85-12", letter to Hugh L. Thompson, Jr., NRC, from Public Service of New Hampshire, SBN-976, T.F. B5.3.99, Mar. 31, 1986.

2. Thompson, Hugh L. Jr., "Implementation of TMI Action Item II.K.3.5, 'Automatic Trip of Reactor Coolant Pumps' (Generic Letter No. 85-12)," Letter from Director, Division of Licensing, NRC, to all applicants and licensees with Westinghouse (W) designed nuclear steam supply systems (NSSSs), June 28, 1985.

3. Eisenhut, Darrell G., "Resolution of TMI Action Item II.K.3.5, 'Automatic Trip of Reactor Coolant Pumps' (Generic Letter No. 83-10d)", NRC letter to all licensees with Westinghouse (W) designed Nuclear Steam Supply Systems (NSSSs) (except Yankee Atomic Electric Company), Feb. 8, 1983.

4. Berlinger, Carl, "RCP Trip, Seabrook Station Units 1 and 2", NRC Memorandum to Vic Nerses, April 10, 1986.