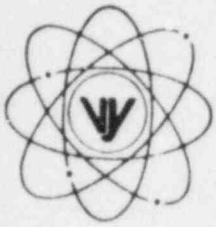


VERMONT YANKEE NUCLEAR POWER CORPORATION



RD 5, Box 169, Ferry Road, Brattleboro, VT 05301

July 3, 1985
FVY 85-63

REPLY TO:
ENGINEERING OFFICE
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FRAMINGHAM, MASSACHUSETTS 01701
TELEPHONE 617-872-8100

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

Attention: Office of Nuclear Reactor Regulation
Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch Number 2
Division of Licensing

References: (a) License Number DPR-28 (Docket Number 50-271)
(b) Letter, USNRC to All Operating Reactors, Generic Letter
83-28, NRY 83-164, dated July 8, 1983
(c) Letter, VYNPC to USNRC, FVY 83-117, dated November 7, 1983
(d) Letter, VYNPC to USNRC, FVY 84-25, dated March 23, 1984
(e) Letter, VYNPC to USNRC, FVY 84-73, dated June 26, 1984
(f) Letter, VYNPC to USNRC, FVY 84-116, dated November 25, 1984
(g) Letter, VYNPC to USNRC, FVY 84-120, dated October 5, 1984
(h) Letter, USNRC to VYNPC, NRY 85-73, dated April 23, 1985

Subject: Response to Request for Additional Information Following
Preliminary Staff Review of License Response to Generic
Letter 83-28

Dear Sir:

By letter, dated April 23, 1985 [Reference (h)], you requested additional information concerning Vermont Yankee's response to Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events." Enclosure 1 to this letter provides the additional information requested for Items 2.1 (Part 1), 2.1 (Part 2), 2.2.1, 2.2.2 and 4.5.3.

We trust this information is acceptable; however, should you have any questions or require additional information, please contact us.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

R. W. Capstick
R. W. Capstick
Licensing Engineer

RWC/mmt
Enclosure

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Generic Letter 83-28 Response
Supplemental Information

Item 2.1 (Part 1)

NRC Request

Licensee needs to state that it has verified that components needed to accomplish reactor trip are designated as safety-related and identified as such on documents and in information handling systems. This assurance should be provided without waiting for completion of the equipment classification upgrade program.

Response

As described in our letter, dated October 5, 1984 [Reference (g)], our present "Information Handling System" used to identify safety-related components is comprised of three separate documents. The following summarizes these documents as they relate to the Reactor Protection System:

1. Yankee Atomic Electric Company Operational Quality Assurance Manual (YOQAP-1-A), Appendix C, "Classification of Structures, Components and Systems"

The following systems and components related to the reactor trip function are designated as safety-related in YOQAP-1-A, Appendix C:

Mechanical Systems and Components

- o Control Rod Drive Housing Supports
- o Control Rods
- o Control Rod Drives
- o Control Rod Drives Accumulators
- o Scram Discharge Volume
- o Scram Piping

Instrumentation Systems and Components

- o Reactor Protection System
- o Nuclear Boiler Instrumentation
- o Neutron Monitoring System (IRM and APRM)

In addition, YOQAP-1-A, Appendix C provides criteria for determining the portions of the above listed systems in which the QA program applies (i.e., those components necessary to perform the system safety function).

2. Safety Class Drawings

The following drawings associated with the Reactor Protection and Associated Systems indicate safety class boundaries.

Electrical One-Line Drawings

G-191372, Sheet 1 - 125 V dc and Vital ac One-Line Wiring Diagram

System Flow Diagrams

G-191167 - Nuclear Boiler

G-191170 - Control Rod Drive Hydraulic System

G-191175, Sheet 1 - Primary Containment Atmosphere Control System

G-191267 - Nuclear Boiler Vessel Instrumentation

3. 1-E Instrument List

This document lists the Class 1E (safety-related) instruments related to Technical Specification requirements. All instruments related to the Reactor Protection System function are listed on the 1E Instrumentation List.

These documents are presently utilized by Vermont Yankee to determine safety classification for components associated with the Reactor Protection System function. Adequate guidance is available to insure appropriate control of safety-related activities affecting RPS components including engineering, operations, maintenance, installation, testing and procurement.

Our Equipment Classification Upgrade Program as committed to in Reference (f) to improve the "Information Handling System" used to identify safety-related components has been initiated. It is our intent to develop a Master Equipment List that will identify all safety-related components. This will assist in the safety class determination process that is now performed at the start of each plant work activity. In the interim, the existing documents summarized above will continue to be the basis for insuring proper control of safety-related work activities.

The present lack of a single safety class list for RPS components does not adversely affect ongoing safety-related work activities, in that all systems needed to accomplish reactor trip are designated as safety class.

The Reactor Protection System (RPS) will be the first system to be re-evaluated under the Equipment Classification Upgrade Program once the formal written procedures and methodologies are finalized.

Item 2.1 (Part 2)

NRC Request

Licensee's vendor interface program for RTS components is apparently limited to the NSSS vendor. The response shall be extended to include periodic contact with all vendors of RTS components, show how the division of responsibility between nuclear and non-nuclear divisions of vendors and the utility is handled and verify that lists of vendor technical information and the information itself is available at the reactor site for audit.

Response

The response to the item is incorporated with the response to Item 2.2.2.

Item 2.2.1

NRC Request

Licensee needs to describe how the concerns of sub-items 2.2.1.1 through 2.2.1.6 are addressed by its current program and its review and proposed modifications.

Response

Vermont Yankee's response addresses each of the concerns of sub-items 2.2.1.1 through 2.2.1.6 first in terms of our current program and then in terms of our proposed Equipment Classification Upgrade Program.

Item 2.2.1.1

The criteria for identifying components as safety-related within systems currently classified as safety-related. This shall not be interpreted to require changes in safety classification at the systems level.

Response

Current Program

Per the Operational Quality Assurance Manual (YOQAP-1-A), Vermont Yankee utilizes ANS-22, Draft 4, Revision 1, dated May 1973 for determining safety classification. In addition, Appendix C to YOQAP-1-A provides a general list of safety-related structures, systems and components. The criteria for determining the portions of the listed safety class systems in which the QA program applies is documented by notes to the Appendix C list and summarized below:

- o Quality Assurance program requirements are applicable only to those portions of systems necessary to perform the system safety function.

- o Instrumentation lines shall be classified as follows:
 - a. Lines 3/4 inch and smaller which are part of the reactor coolant pressure boundary shall be Safety Class 2 to a closed valve, orifice, excess flow check valve, other flow limiting device or sensing instrumentation.
 - b. All instrument lines which are connected to the reactor coolant pressure boundary and are utilized to activate safety systems shall be Safety Class 2 to the sensing instrumentation.
 - c. All instrument lines not connected to the reactor coolant pressure boundary but used to actuate a safety system shall be the same classification as the system to which they are attached.
- o Any component of an electrical system or instrumentation system is excluded from the QA Program requirements if it meets the following criteria:
 - a. A failure of the component by electrical shorting, open circuiting, grounding or mechanical failure would not render the system incapable of performing its intended safety function.
 - b. A failure of the fluid pressure boundary of the component would not render the system incapable of performing its intended safety function.
 - c. It is not used to operate or control a device required by Technical Specifications.

Proposed Equipment Classification Upgrade Program

A formal procedure will be prepared to provide guidelines for making a determination of component safety classification. The procedure will be based upon the guidelines of ANS-22, Draft 4, Revision 1, May 1973, or a Vermont Yankee approved substitute.

A main objective of preparing such a procedure will be to have the ability to consistently determine the safety classification of all components. The procedure will have instructions on how to handle components that fall into "gray areas."

Item 2.2.1.2

A description of the Information Handling System used to identify safety-related components (e.g., computerized equipment list) and the methods used for its development and validation.

Response

Current Program

As described in our letter, dated October 5, 1984 [Reference (g)], our present "Information Handling System" used to identify safety-related components is comprised of three separate documents:

1. Operational Quality Assurance Manual (YOQAP-1-A)
2. Safety Class Drawings
3. 1E Instrument List

YOQAP-1-A

Appendix C lists the safety class structures, systems and components at Vermont Yankee. Although every individual component is not listed, notes are provided that include the criteria used to identify these portions of the Safety Class System that require quality assurance.

Appendix B indicates that in lieu of regulatory Guide 1.26, Vermont Yankee uses ANS-22, Draft 4, Revision 1, dated May 1973 to classify components.

Safety Class Drawings

System flow diagrams and electrical one-line diagrams are marked to indicate the safety class boundaries.

1E Instrument List

This list is maintained at the plant and was created from instruments necessary to meet Technical Specification requirements. All instruments related to the Reactor Protection System function are listed on the 1E list.

Development and Validation Methodologies

Although formal procedures were not used to develop the above listed documents, a review of available documentation indicates that Appendix C of YOQAP-1-A and the Safety Class Drawings were developed based upon engineering evaluation of safety function. As a guideline in performing this evaluation, ANS-22, or one of its successors, IEEE Standard 308, and the FSAR are often referenced in available documentation. Validation of these documents was accomplished by YNSD and/or plant reviews as evidenced by available documentation. Safety Class boundaries on drawings are controlled by our Plant Drawing System. Also, ANS-22, Draft 4, Revision 1, dated May 1973 is presently being used in accordance with Appendix B of YOQAP-1-A.

Proposed Equipment Classification Upgrade Program

The information handling system used to identify safety-related components will be called a Master Equipment List (MEL). Each safety-related component will be listed by its unique tag number. The safety classification will be indicated for all components. The formal procedure described in our response to Item 2.2.1.2 above will be used to document and validate the safety classification.

Item 2.2.1.3

A description of the process by which station personnel use this Information Handling System to determine that an activity is safety-related and what procedures for maintenance, surveillance, parts replacement and other activities defined in the introduction of 10CFR50, Appendix B, apply to safety-related components.

Response

Current Program

The following activities, by their associated procedures, involve the use of the Information Handling System to determine that an activity is safety-related.

<u>Activity</u>	<u>Plant Procedure</u>	<u>Engineering Procedure</u>
Engineering Design Change	AP6004	WE-100
Plant Design Change	AP6000	WE-101
Plant Alteration	AP6003	NA
Maintenance	AP0021, AP6023	NA
Procurement	AP0800, AP6020	WE-200
Installation and Test	AP6001	WE-106, WE-104

Presently, at the start of an activity a determination of safety classification based upon the Information Handling System documents is required to determine the appropriate quality assurance procedures to be followed.

Proposed Equipment Classification Upgrade Program

The proposed Master Equipment List (MEL) will list all safety-related components and the proper safety classification for each.

Although the exact process by which station personnel will use the MEL to determine the proper QA procedures for a plant-specific activity is under development, the upgraded program eliminates the need to make functional component evaluations at the start of each work activity in order to insure the correct safety class. These evaluations will already be performed for all safety class components and the results will be documented on the MEL. Thus, the upgraded process will be simpler than that currently employed and it will provide greater assurance that the appropriate quality assurance practices are applied.

Item 2.2.1.4

A description of the management controls utilized to verify that the procedures for preparation, validation and routine utilization of the Information Handling System have been followed.

Response

Current Program

A proposed change to YOQAP-1-A is initiated by the preparer and sent to the Operational Quality Assurance Department (OQA). OQA coordinates the review and approval of the change. A copy of the change is sent to Vermont Yankee, Brattleboro and plant for review. Final Vermont Yankee approval is provided by the Manager of Operations.

The Safety Class Drawings are controlled under the Quality Assurance Program (YOQAP-1-A). Changes resulting from corrective updates or design changes undergo a formal review and sign-off.

The 1E Instrument List is controlled by the plant. Changes are prepared and reviewed by the Plant Engineering Support and Instrumentation and Control Departments.

Changes to the seismic or safety classification of a component are now required to be supported by an appropriate plant design change document prepared and approved in accordance with existing procedures.

Routine utilization of the above documents is governed by procedures related to specific work activities (see Item 2.2.1.3, above). Procedures are reviewed bi-annually.

The Operational Quality Assurance Department performs audits, inspections and/or surveillance for all phases of plant operations, including procedures, maintenance, modifications and procurement to ensure that procedures for preparation, validation and utilization of the safety classification information handling system have been followed. These audits are reviewed by the Plant Superintendent and the Vice-President and Manager of Operations to ensure that proper corrective action is taken where necessary to ensure that all items requiring quality assurance are handled at a level commensurate with their safety classification.

Proposed Equipment Classification Upgrade Program

The MEL will become a controlled document, replacing other documents as appropriate. The ability to revise the MEL will be procedurally controlled. The procedure(s) that will be developed to prepare, validate and use the MEL will be auditable by the Quality Assurance Department, in the same manner as other existing procedures.

Item 2.2.1.5

A demonstration that appropriate design verification and quality testing is specified for procurement of safety-related components. The specifications shall include qualification testing for expected safety service conditions and provide support for the licensees' receipt of testing documentation to support the limits of life recommended by the supplier.

Response

Current Program

Design verification and qualification testing specifications for procurement of safety-related components is accomplished pursuant to the requirements of YOQAP-1-A and is implemented via the Nuclear Service Division Engineering Department Quality Assurance Manual. The implementation of these requirements ensure that design verification is accomplished by a review of the design by qualified individual or task group and testing or analysis as appropriate. This testing and analysis provides assurance that the system/component will perform properly during anticipated service conditions.

Where a qualified life has been established as part of the Environmental Qualification Program, Vermont Yankee maintains audible files which support the limit of life recommended by the supplier pursuant to our Environmental Qualification Program. The procurement process is covered in our response to Item 2.2.1.3.

Proposed Equipment Classification Upgrade Program

Same response as current program.

Item 2.2.1.6

Licensees and applicants need only to submit for staff review the equipment classification program for safety-related components. Although not required to be submitted for staff review, your equipment classification program should also include the broader class of structures, systems and components important to safety required by GDC-1 (defined in 10CFR Part 10, Appendix A, "General Design Criteria, Introduction").

Response

As previously noted in our letter dated November 7, 1983, we do not agree that plant structures and components important to safety constitute a broader class than the safety-related set. We nevertheless believe that nonsafety-related plant structures, systems and components have been designed and are maintained in a manner commensurate with their importance to the safety and operation of the plant.

Proposed Equipment Classification Upgrade Program

Same response as current program.

Item 2.2.2

NRC Request

Licensee needs to describe how his current limited vendor interface program will be modified to incorporate the NUTAC recommendations and supplemented to address the staff finding that NUTAC fails to address the concern of establishing and maintaining an interface between all vendors of safety-related equipment and the utility.

Response

Vermont Yankee's response to Generic Letter 83-28, dated March 23, 1984 [Reference (d)], stated that we were planning to implement the NUTAC recommendations, when issued formally. By letter, dated June 26, 1984 [Reference (e)], we provided summary information of enhancements to our existing Operating Experience Review and Assessment/Commitment Tracking System to implement the recommendations of the NUTAC Group. Vermont Yankee has subsequently implemented procedures to assure that relevant information is distributed to user departments and evaluated for impact on Vermont Yankee's Maintenance and Surveillance Program. This program, as currently implemented, includes the following:

1. Organizational responsibilities for the review of information relevant to plant safety are identified.
2. A program is implemented to define and track the cause of action resulting from the reviews conducted in accordance with Item 1, above.
3. A mechanism is provided for documenting that required actions are accomplished in an efficient and timely manner by appropriate plant personnel.
4. Information forwarding systems are developed to ensure that reviewed material is incorporated into procedures and training programs, or distributed for information, as appropriate.
5. Proper performance of the review process is ensured via periodic internal audits.

The Vermont Yankee Operating Experience Review and Assessment Program directs information relevant to plant safety to a full-time Assessment Coordinator. This information consists of Vermont Yankee-generated information, NRC-generated information, industry-generated information and vendor-generated information. This program meets the utility implementation responsibilities as defined in Paragraph 4.1.1 of the NUTAC document. This program applies to all vendors and is not limited to only NSSS vendors.

Vermont Yankee reaffirms its belief that the program provided in the March 1984 NUTAC document achieves the degree of vendor/utility interface necessary to meet the intent of Paragraph 2.2.2 of Generic Letter 83-28. Vermont Yankee has implemented the program described therein, as amplified by the preceding paragraphs.

Item 4.5.3

NRC Request

The staff finds that modifications are not required to permit on-line testing of the backup scram valves. However, the staff concludes that testing of the backup scram valves (including initiating circuitry) at a refueling outage frequency, in lieu of on-line testing, is appropriate and should be included in the Technical Specification surveillance requirements. The licensee needs to address this conclusion.

Regarding the scram pilot valves (including all initiating circuitry), the licensee needs to provide the results of a review of existing or proposed intervals for on-line testing considering the concerns of Subitems 4.5.3.1 to 4.5.3.5 of the generic letter. The response shall show how these intervals result in high reactor trip system availability and present proposed Technical Specification changes for staff review.

Response

As discussed in our response to Item 4.5.1 and 4.5.2 in Reference (d), the backup scram valves are nonsafety-related and no credit is taken for their functioning in any plant safety analysis. As such, there is no basis for including the requirements for functional testing of these valves in our

Technical Specifications. Plant operating procedure, OP 4398, Scram Reset Delay Functional Calibration, includes provisions to verify, prior to startup from any refuel outage, that the back-up scram solenoids energize, the scram air header depressurizes, the low air header annunciator alarms and the scram air header pressure indicators decrease to zero.

Because these valves are nonsafety-related, procedural requirements for the functional testing of these valves is deemed appropriate. Our adherence to this procedure is subject to review and inspection by NRC inspectors.

Regarding the scram pilot valves (including all initiating circuitry), Vermont Yankee is participating with the Boiling Water Reactors Owners Group (BWROG) Technical Specification Improvement Committee which is addressing the adequacy of existing Reactor Trip System component testing internals and allowed out-of-service time. The results of this effort have been documented in GE Topical Report NEDO-30844 which is presently under NRC review. Based upon NRC's review and acceptance of the GE report, Vermont Yankee will determine the need to submit Technical Specification amendment requests.