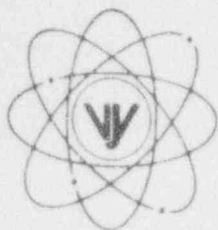


# VERMONT YANKEE NUCLEAR POWER CORPORATION



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May 20, 1994  
BVY 94-51

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

References:

- (a) License No. DPR-28 (Docket No. 50-271)
- (b) Letter, VYNPC to USNRC, BVY 93-86, dated 8/19/93
- (c) Letter, VYNPC to USNRC, LER 93-09, BVY 93-99, dated 8/13/93
- (d) Letter, VYNPC to USNRC, LER 93-06, BVY 93-76, dated 6/24/93
- (e) Vermont Yankee Analysis Calculation, Calculation No. 93-006, dated 8/28/93.

Subject: Proposed Change No. 176, Removal of Core Spray High Sparger Pressure Instrumentation From Emergency Core Cooling System Actuation Instrumentation Technical Specifications

Pursuant to Section 50.90 of the Commission's Rules and Regulations, Vermont Yankee Nuclear Power Corporation hereby proposes the following changes to Appendix A of the operating license (Reference (a)).

## Proposed Change

Replace Pages 35 and 50 of the Vermont Yankee Technical Specifications with the attached revised Pages 35 and 50. A change to these pages is being proposed to remove Core Spray (CS) High Sparger Pressure Instrumentation from the Vermont Yankee Technical Specifications for Emergency Core Cooling System (ECCS) Actuation Instrumentation. In addition, an unrelated administrative change is also proposed to be incorporated to correct equipment identification numbers on Pages 35 and 50.

The first specific change is to remove the Core Spray High Sparger Pressure parameter from the ECCS Actuation Instrumentation Tables 3.2.1 and 4.2.1. The second specific change which is administrative in nature only, is to correct the

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Core Spray Pump identification number as referred to in Tables 3.2.1 and 4.2.1 and to include both pump numbers.

#### Reason for Change

At Vermont Yankee (VY), an instrumentation detection system is provided to confirm the integrity of the core spray piping between the inside of the reactor vessel and the core shroud. A differential pressure indicating switch measures the pressure difference between the bottom of the core and the inside of the core spray sparger pipe just outside the reactor vessel. An increase in the normal pressure drop initiates an alarm in the Main Control Room which is indicative of a loss of integrity of the above-described piping. This system exists in addition to inspections performed every refueling outage to verify the physical integrity of the Core Spray Sparger Piping.

References (c) & (d) describe the condition where the setpoints for the differential pressure indicating switches (DPIS-14-43A,B) for Core Spray Sparger Break Detection were set non-conservatively. The integrity of the CS Sparger was not in question. The setpoint was changed to a conservative value and reference (b) committed to perform a review of the  $\leq 5$  psid Technical Specification (TS) setpoint. During this effort it was determined that inclusion of the subject CS Sparger instrumentation in the Technical Specifications is unnecessary and should be removed. Accordingly, we are proposing this change to the Technical Specifications to remove this instrumentation from ECCS Actuation Instrumentation.

The administrative changes to Tables 3.2.1 and 4.2.1 are proposed to correct typographical errors concerning Core Spray Pump Identification Nos.

#### Basis for Change

Tables 3.2.1 and 4.2.1 have been revised to remove Core Spray High Sparger Pressure Instrumentation from the Vermont Yankee Technical Specifications for Emergency Core Cooling System (ECCS) Actuation Instrumentation. Inclusion of this instrumentation is inconsistent with other instrumentation included in Tables 3.2.1 & 4.2.1. Tables 3.2.1 & 4.2.1 are included in the Technical Specifications under "Protective Instrument Systems." The Vermont Yankee definition of "Protective Function" as it appears in the VY Technical Specifications is as follows:

"A system protective action which results from the protective action of the channels monitoring a particular plant condition."

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This definition is not applicable to Core Spray High Sparger Pressure Instrumentation which performs a local indication and alarming function only and is classified as non-nuclear safety (NNS) related. As such, this instrumentation is not considered Protective Instrumentation which is required to function to initiate actions to mitigate the consequences of accidents. No initiation of systems or equipment trip functions are performed by this CS Sparger instrumentation.

To declare the CS System inoperable because a NNS local indication/alarming instrumentation system is out of calibration or non-functional does not meet the intent of Protection System Limiting Conditions of Operation. The safe operation of the plant is not affected while this equipment is unavailable. In addition, the attention directed to such a system is inconsistent with the optimum utilization of plant resources.

General Electric (GE) was the designer of the above line break detection system installed at VY. Per GE, this system was added because the first BWR plants had only the CS System for long-term core cooling. Later, plants like VY were provided with Low Pressure Coolant Injection (LPCI) Systems in addition to CS, adding defense-in-depth which we believe eliminated the need for the detection system. In addition, the CS Sparger piping is inspected every refueling outage. Subsequent inspections performed since the first inspection in 1980 have not identified any additional cracking in the CS Sparger piping.

The NRC has recently approved the removal of Core Spray Sparger Break Detection Instrumentation from the Technical Specifications of the Duane Arnold Energy Center (DAEC). As is the case for DAEC, the removal of this instrumentation from the Technical Specifications does not affect the performance of any safety related equipment at VY. There are no automatic trip functions performed by this instrumentation.

The instrumentation to be removed from the ECCS Actuation Instrumentation Technical Specifications perform a local monitoring and alarming function only. This change will not pose any change to hardware or to the design basis, protective function, redundancy, trip point, or logic of the original system. The alarm setpoint has already been changed to be responsive to calculated line break conditions.

The subject administrative change which corrects typographical errors is to be incorporated to enhance the accuracy of the Technical Specifications.

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### Safety Considerations

The removal of TS limiting conditions of operation and surveillance requirements for Core Spray High Sparger Pressure Instrumentation for ECCS Actuation Instrumentation will not change the function of any equipment. This instrumentation is not required to initiate any protective functions. The failure of this instrumentation will not have any affect on the accomplishment of any safety functions and there is no threat to plant safety.

Per the VY FSAR, the safety objective of the Core Spray Cooling Control and Instrumentation Systems is to initiate appropriate responses from the various cooling systems so that the fuel is adequately cooled under abnormal or accident conditions. The Core Spray Sparger Break Detection System performs a non-safety local indication and alarming function only. The Core Spray (CS) High Sparger Pressure Instrumentation does not perform any initiation or control function and its failure has no affect on the accomplishment of adequately cooling the fuel under abnormal or accident conditions.

As stated above, the Core Spray Sparger Break Detection System was added because the first BWR plants had only the CS System for long-term core cooling at low pressure. Later, plants like VY were provided with Low Pressure Coolant Injection (LPCI) Systems in addition to CS. In addition, the ability of this CS Instrumentation System to detect cracks in the piping is doubtful per GE. The piping almost requires a guillotine break for the system to work. Therefore, based upon the above, the original basis for designing and installing the system is weak. The inspections of CS Sparger piping performed every refueling outage is a better means of detecting the start of piping integrity degradation. No cracks in the CS Sparger piping have been identified since the first inspection in 1980.

The removal of Core Spray High Sparger Pressure Instrumentation from the Technical Specifications for ECCS Actuation Instrumentation does not impact any FSAR safety analysis nor does it involve any change in Technical Specification initiation/control setpoints, plant operation, protective function or design basis of the plant.

In addition, the NRC has recently approved the removal of Core Spray Sparger Break Detection Instrumentation from the Technical Specifications of the Duane Arnold Energy Center (DAEC).



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The changes to correct the typographical errors on Tables 3.2.1 and 4.2.1 are administrative in nature. Approval of these proposed changes will have no affect on plant safety.

The proposed changes have been reviewed by the Plant Operations Review Committee and the Vermont Yankee Nuclear Safety Audit and Review Committee.

#### Significant Hazards Considerations

The standards used to arrive at a determination that a request for amendment involves no significant hazards consideration are included in the Commission's regulations, 10CFR50.92, which state that the operation of the facility in accordance with the proposed amendment would not: 1) involve a significant increase in the probability or consequences of an accident previously evaluated, 2) create the possibility of a new or different kind of accident from any accident previously evaluated, or 3) involve a significant reduction in a margin of safety.

The discussion below addresses the proposed changes with respect to these three criteria and demonstrates that the proposed amendment involves a no-significant-hazards consideration:

1. The proposed change to remove the Core Spray High Sparger Pressure Instrumentation from the Technical Specifications for ECCS Actuation Instrumentation is consistent with NRC requirements concerning this instrumentation. This instrumentation is considered NNS and performs a local monitoring and alarm function only. In addition, the NRC has recently approved the removal of Core Spray Sparger Break Detection Instrumentation from the Technical Specifications of another BWR with a similar situation.

The CS Sparger Piping is inspected every refueling outage to verify its integrity. No cracks in the CS Sparger piping have been identified since the first inspection in 1980. CS Sparger Piping integrity is still assured. The instrumentation systems to be removed from the ECCS Actuation Instrumentation Technical Specifications do not perform any automatic control or trip function. In addition, this instrumentation does not provide information that is required to permit the control room operator to take manual actions that are required for safety systems to accomplish their safety functions for design basis accident events.

The proposed change does not result in any system hardware modification, function change or new plant configuration. The requested change to ECCS Actuation Instrumentation does not

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impact any FSAR safety analysis involving the ECCS or Protection Systems. These monitoring functions are not contributors to the initiation of accidents.

The administrative changes to correct typographical errors on Tables 3.2.1 and 4.2.1 will have no affect on plant hardware, plant design, safety limit setting or plant system operation and therefore, do not modify or add any initiating parameters that would significantly increase the probability or consequences of any previously analyzed accident.

Therefore, it is concluded that there is not a significant increase in the probability or consequence of an accident previously evaluated.

2. The function of the Core Spray High Sparger Pressure Instrumentation to be removed from the Technical Specifications is for local indication and alarm only. These functions are not necessary for operators to accomplish any safety functions.

The proposed change does not involve any change in hardware, function, Technical Specification trip setpoints, plant operation, redundancy, protective function or design basis of the plant. There is no impact on any existing safety analysis or safety design limits. Core Spray High Sparger Pressure Instrumentation functions do not initiate nuclear system parameter variations which are considered potential initiating causes of threats to the fuel and the nuclear system process barrier.

As discussed above, the proposed administrative change only corrects typographical errors concerning equipment identification numbers. This change does not affect any equipment and it does not involve any potential initiating events that would create any new or different kind of accident.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change to remove the Core Spray High Sparger Pressure Instrumentation from the Technical Specifications for ECCS Actuation Instrumentation does not affect any existing safety margins. This equipment is NNS and performs a local indication and alarming function only. The original intent of this detection system was because the first BWR plants had only the CS System for long-term core cooling. Later, plants like VY were provided with Low Pressure Coolant Injection (LPCI) Systems in addition to CS.

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Existing Technical Specification requirements for automatic trip functions are unaffected. Failure of the Core Spray High Sparger Pressure Instrumentation does not preclude the ability of the CS System to perform its safety function to mitigate the consequences of accidents or of any other safety system to accomplish its safety functions. Proper ECCS functioning post-accident is not relied upon by NNS alarming functions but by such systems as safety related reactor level indication.

The CS Sparger Piping is inspected every refueling outage to verify its integrity. No cracks in the CS Sparger piping have been identified since the first inspection in 1980. The removal from the Technical Specifications has no affect on the bases of Protective Instrumentation which is to operate to initiate required system protective actions. The Core Spray High Sparger Pressure Instrumentation does not perform any safety function.

As discussed above, the proposed administrative change which corrects typographical errors does not affect any equipment involved in potential initiating events or safety limits. In addition, the Commission has provided guidance for the application of the standards in 10CFR50.92 by providing certain examples (51FR7751, dated March 6, 1986) of actions likely to involve no significant hazards consideration. One of these examples (i) is a purely administrative change to the Technical Specifications; for example, a change to achieve consistency throughout the Technical Specifications, correction of an error, or a change in nomenclature. This proposed change falls within the scope of this Commission example since it involves the correction of a typographical error.

Based upon the above, it is concluded that the proposed changes do not involve a significant reduction in a margin of safety.

Based upon the above, we conclude that the proposed changes do not constitute a significant hazards consideration as defined in 10CFR50.92(c).

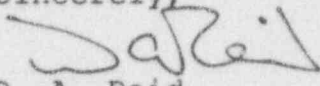
#### Schedule of Change

The proposed changes will be incorporated into the Vermont Yankee Technical Specifications as soon as practicable following receipt of your approval.

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We trust that the information provided above adequately supports our request, however, should you have any questions on this matter, please contact us.

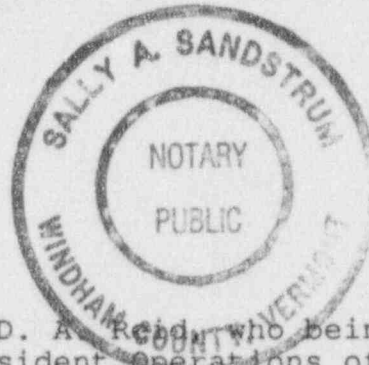
Sincerely,



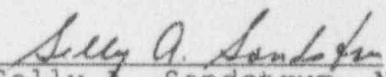
D. A. Reid,  
Vice President Operations  
Vermont Yankee Nuclear Power Corporation

cc: USNRC Region I Administrator  
USNRC Resident Inspector, VYNPS  
USNRC Project Manager, VYNPS

STATE OF VERMONT     )  
                              ) SS  
WINDHAM COUNTY     )



Then personally appeared before me, D. A. Reid, who being duly sworn, did state that he is Vice President Operations of Vermont Yankee Nuclear Power Corporation, that he is authorized to execute and file the foregoing document in the name and on the behalf of Vermont Yankee Nuclear Power Corporation and that the statements therein are true to the best of his knowledge and belief.

  
Sally A. Sandstrum Notary Public  
My Commission Expires February 10, 1995