



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 140 TO FACILITY OPERATING LICENSE NO. DPR-28

VERMONT YANKEE NUCLEAR POWER CORPORATION

VERMONT YANKEE NUCLEAR POWER STATION

DOCKET NO. 50-271

1.0 INTRODUCTION

By letter dated May 20, 1994, the Vermont Yankee Nuclear Power Corporation (the licensee) submitted a request for changes to the Vermont Yankee Nuclear Power Station Technical Specifications (TSs). The requested changes would remove Core Spray (CS) High Sparger Instrumentation from Vermont Yankee Technical Specifications Tables 3.2.1 and 4.2.1 regarding Emergency Core Cooling System (ECCS) Actuation Instrumentation. In addition, an unrelated administrative change is also proposed.

2.0 EVALUATION

The CS system's function is to protect against overheating of the fuel in the event the core is uncovered by the loss-of-coolant accident. The cooling effect is accomplished by directing spray jets of cooling water directly onto the fuel assemblies from spray nozzles mounted in the sparger ring located within the shroud just above the reactor core.

The system consists of two independent loops. Each loop consists of two 50% capacity centrifugal pumps driven by electric motors; a spray sparger in the reactor vessel above the core; piping and valves to convey water from the suppression pool to the sparger; and the associated controls and instrumentation.

CS system pressure between the two pump discharge valves is monitored by a pressure switch to permit detection of leakage from the primary system into the CS system outside the primary containment. A detection system is also provided to continuously confirm the integrity of the CS piping between the inside of the reactor vessel and the core shroud. A differential pressure switch measures the pressure difference between the bottom of the core and the inside of the CS sparger pipe just outside the reactor vessel. If the CS sparger piping is sound, this pressure difference will be the pressure drop across the core. If integrity is lost, this pressure drop will include the core pressure drop and the steam separator pressure drop. An increase in the normal pressure drop initiates an alarm in the main control room. Pressure in

each CS pump suction and discharge pipeline is monitored by a pressure indicator which is locally mounted to permit determination of suction head and pump performance.

The licensee submitted an amendment requesting the removal of CS High Sparger Pressure Instrumentation from the TSs for ECCS Actuation Instrumentation. In addition some unrelated administrative changes were also requested.

The licensee is requesting to revise Tables 3.2.1 and 4.2.1 to remove CS High Sparger Pressure Instrumentation from the Vermont Yankee (VY) TSs for ECCS Actuation Instrumentation. Licensee indicated that the inclusion of this instrumentation is inconsistent with other instrumentation included in Tables 3.2.1 and 4.2.1. Tables 3.2.1 and 4.2.1 are included in the TSs under "Protective Instrument Systems." The VY definition of "Protective Function" as it appears in the VY TSs is as follows:

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

The licensee stated that this definition is not applicable to CS High Sparger Pressure Instrumentation which performs a local indication and alarming function only and is classified as nonnuclear 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 actuation of systems or initiation of equipment trip functions are performed by this CS Sparger Instrumentation.

The instrumentation suggested for removal from the ECCS Actuation Instrumentation TSs 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 proposed administrative changes correct typographical errors. They are incorporated to enhance the accuracy of the TSs.

The proposed revisions do not affect the performance of safety-related equipment. The CS Sparger Instrumentation does not provide a trip function as indicated by Table 4.2.1. This instrumentation performs an annunciator function only. Annunciator functions are not safety-related and are not part of the TSs.

The NRC staff finds the proposed change removing CS Sparger Instrumentation from Table 4.2.1 acceptable. The additional changes are administrative in nature only and the staff finds them acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Vermont State Official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 34669). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: August 22, 1994