Docket No.: 50-271

FEB 14 1986

Mr. R. W. Capstick
Licensing Engineer
Vermont Yankee Nuclear Power Corporation
1671 Worcester Road
Framingham, Massachusetts 01701

Dear Mr. Capstick:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - APPENDIX J TECHNICAL SPECIFICATIONS

Re: Vermont Yankee Nuclear Power Station

We are reviewing your proposed Appendix J Technical Specifications dated June 26, 1984, and find that we need additional information to complete our review. We request that you provide responses to the enclosed request within 90 days of receipt of this letter.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by

Vernon L Rooney, Project Manager
BWR Project Directorate #2
Division of BWR Licensing

Enclosure:
As stated

cc w/enclosure:
See next page

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Mr. R. W. Capstick
Vermont Yankee Nuclear Power Corporation
Vermont Yankee Nuclear Power Station

cc:

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REQUEST FOR ADDITIONAL INFORMATION

APPENDIX J LEAK TEST PROGRAM

VERMONT YANKEE NUCLEAR POWER CORPORATION
DOCKET NO. 50-271

General Discussion

Appendix J to 10 CFR 50 contains the regulatory requirements regarding individual containment isolation valve leakage test requirements. It also provides the conditions which must exist to preclude the Type C air leak tests. In addition, Appendix A, GDC54 provides more general requirements regarding piping systems penetrating containment. This regulation requires that piping systems penetrating containment "shall be designed with a capability to test periodically the operability of the isolation valves...to determine that valve leakage is within acceptable limits."

Appendix J, Section III.C.3 states that "leakage from containment isolation valves that are sealed with fluid from a seal system may be excluded...provided that (a) such valves have been demonstrated to have fluid leakage rates that do not exceed those specified in the technical specifications or associated bases, and (b)the installed isolation valve seal-water system fluid inventory is sufficient to assure the sealing function for at least 30 days at a pressure of 1.1 Pa.

In examining a seal system it must be ascertained that the system will maintain the water seal under post accident design basis conditions including a LOCA coincident with loss of offsite power and the worst single active failure. This usually means that the isolation valves in question must be feed by pumps that are powered by diverse diesels so that if the single active failure is postulated to be a diesel failure then the seal system will remain functional by virtue of the redundant diesel. In the evaluation of the seal system no credit is given for water in the reactor vessel to act as a source of water inventory acting against the isolation valves. On the other hand, an inward acting (toward containment) passive water leg would be acceptable if it provided a pressure of 1.1 Pa against the valve for 30 days given the specified valve leakage rate. The valves which meet the seal system provision mentioned above should, as indicated in Appendix J, be water tested with an acceptance criteria provided in the Technical Specifications.

GDC 54 of Appendix A to 10 CFR 50 is the regulatory basis which the staff looks to in requiring a water test on valves which terminate below the minimum suppression pool level. These valves are not covered by the Appendix J test program. However, a water leak test will provide confidence that the containment boundary will be maintained in an accident condition requiring the valve to be isolated.

Questions

1. The following penetrations have been listed in the Vermont Yankee Local Test program as having met the requirements of the water-seal as discussed above and in Appendix J and consequently no air-leakage testing is proposed. For each of these systems state how a water seal is provided under the post accident DBA condition which include loss of offsite power and worst case single active failure. Include or reference drawings or sketches showing system piping and the pumps involved. Note that no credit may be given to water legs provided by water in the reactor vessel. A crossover between redundant trains of an ECCS system may be taken into account if a procedures exists to provide the water leg to the isolation valves in the event it would not otherwise be available:

Penetration No.	System
X-12	RHR Shutdown Cooling Supply
X-13A/B	LPCI Injection
X-14	RWCU Suction
X-16A/B	Core Spray
X-17	RHR Head Spray
X-42	Standby Liquid Control

2. The following piping lines appear to terminate below the minimum drawdown level of the suppression pool. As mentioned above, staff interpretation of GDC 54 requires a water test on these valves. Indicate whether the valves will be water tested and if not justify why a water test should be not performed. Note that an exemption from the regulations must be requested and justified to eliminate leakage testing of these valves.

Penetration No.	System
X-210A/B	RHR Return
X-212	RCIC Turbine Exhaust
X-221	HPCI
X-222	HPCI Drain Pot
X-223	RCIC Drain Pot
X-224	RHR Suction
X-225	HPCI Suction
X-226A/B	Core Spray Suction
X-227	RCIC Suction

3. Discuss the test provisions for the TIP explosive shear valve and the ball valves, penetration X-35C, D, E. Also indicate the proposed testing provisions on the check and solenoid valve of the TIP Air Purge System, penetration X-35A.

4. For the CAD system indicate the valves that will be Type C air tested in penetrations X-50A, B, C-205.

5. The following system isolation valves appear to meet the definition in Section II.A of Appendix J requiring Type C leak testing. Indicate the extent of testing proposed for the isolation valves in these lines and provide your basis for any valves for which test Type C testing is not proposed.

Penetration	System
X-23, 24	Inlet RBCCW
X-39A/B	Drywell Spray