

May 9, 1988

Docket No.: 50-271

LICENSEE: Vermont Yankee Nuclear Power Corporation (VYNPC)

FACILITY: Vermont Yankee Nuclear Power Station

SUBJECT: MEETING SUMMARY

On October 14 and 15, 1987, the NRC staff met at the NRC Region I office in King of Prussia with representatives of VYNPC to discuss remaining informational needs associated with the staff's review of VYNPC's Inservice Testing (IST) program for pumps and valves. On October 28 and December 22, 1987 the staff also discussed by telephone with VYNPC representatives follow on items resulting from the meeting. Meeting minutes which include an attendance roster are enclosed.

The licensee has agreed in telephone discussion with the Project Manager to revise the IST program, based on these meeting minutes, and resubmit the revised program as soon as possible but no later than August 1, 1988.

Sincerely,
Original signed by:

Vernon L. Rooney, Senior Project Manager
Project Directorate I-3
Division of Reactor Projects I/II

Enclosures:
As stated

cc: See next page

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Adjudicatory File (2)
Atomic Safety and Licensing Board
Panel Docket
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Meeting Minutes From The
NRC Staff's Inservice Test Program Review Meeting
With Representatives of the Vermont
Yankee Nuclear Power Corporation
Conducted October 14 and 15, 1987

A working meeting was held at the NRC Region I office in King of Prussia, Pennsylvania with representatives of the Vermont Yankee Nuclear Power Corporation on October 14 and 15, 1987. The purpose of the meeting was to discuss the staff's Request for Additional Information (RAI) questions resulting from the staff's review of the Vermont Yankee's pump and valve inservice testing (IST) program. The staff's RAI questions were sent to the licensee by letter V. L. Rooney to R. W. Capstick on January 5, 1987. The staff's questions served as the meeting agenda. Each of the staff's RAI questions were discussed during the meeting.

The staff's RAI questions are indicated by the letter Q. before the question. The meeting minutes are given under "Comments". Pertinent licensee and staff comments, explanations, understandings and clarifications are discussed in the minutes. For the majority of the RAI questions the discussions provided the staff with the needed clarifications and information to allow the staff to complete the review expeditiously pending receipt of a revised program submittal from the licensee. Where the licensee agreed to take specific action, for example, to revise or make changes to their IST program, an LAR (Licensee Action Required) follows the meeting minutes "Comments". Where the staff's RAI question was resolved during the meeting discussion an R (Resolved) follows the meeting minute "Comments". Several items that will require additional work to obtain resolution by either the licensee or staff are listed as OI-L (Open Item - Licensee) or -S (Open Item - Staff). These open items were discussed in a conference call between the licensee and staff on October 28, 1987 and again on December 22, 1987. Both the staff and the licensee agreed to work for timely resolution of the remaining Open Items. The open items are tabulated in the table that follows.

The purpose of these minutes are to document the results of the above discussions.

The participants were:

D. L. Capton, NRC, Region I
V. L. Rooney, NRC, NRR Headquarters
P. K. Eapen, NRC, Region I
L. J. Prividy, NRC, Region I
J. P. Durr, NRC, Region I
J. Pelletier, Vermont Yankee
D. Reid, Vermont Yankee
G. Cappuccio, Vermont Yankee
K. H. Bronson, Vermont Yankee
T. C. Trask, Vermont Yankee

At the conclusion of the meeting the staff requested that the Vermont Yankee IST program be revised to incorporate the needed program revisions within 60 days from receipt of the meeting minutes. The staff stated that the revised licensee's IST program submittal will be used to base the staff's final review and safety evaluation of the licensee's IST program.

OPEN ITEMS

Valves

<u>VY IST Program Page Number</u>	<u>Question Number</u>	<u>Responsible</u>
V-7	Q.8	OI-L
V-11	Q.2	OI-S and OI-L
V-12 - 14	Q.8	OI-L
V-16	Q.2	OI-L
V-17 & 18	Q.1.b.	OI-L
V-17 & 18	Q.3	OI-S and OI-L
V-17 & 18	Q.9	OI-S and OI-L
V-19 - 21	Q.7	OI-L

NOTE: There were no Open Items for pumps.

PUMPS

1. Service Water Pumps P7-1A-D G191159 Sh 1

Q. The WP appears to be measurable, however, the program's pump testing does not indicate this. The listing should be revised.

Comments:

LAR

The licensee stated that the river water level provides the inlet pressure for these deep well centrifugal pumps. The licensee uses the inlet head and discharge pressure to arrive at the functional equivalent of WP. The licensee will provide an appropriate discussion in his revised program regarding WP and flow measurement.

2. High Pressure Coolant Injection Pumps G191169 Sh 2
HPCI Gland Seal Exhauster
HPCI Hot Well Condensate Pump

Q. Discuss the safety related functions (shutting down the reactor or in mitigating the consequences of an accident) of these pumps. Provide a detailed technical justification for not including the pumps in the program.

Comments:

R

The licensee stated that the gland seal exhaustor and hot well condensate pump are non-safety related and do not have a reactor shutdown or accident mitigation function, therefore, were not included in the program. The licensee stated that proper operation of these pumps are demonstrated by HPCI system operation.

3. Standby Liquid Control Pumps

Q. Is lubricant temperature measured in the pump crankcase or another location?

Comments:

LAR

No. The licensee stated that a generic relief request to delete bearing temperature measurement will be placed in the IST program.

4. Core Spray Pumps P46-1A/B

Q. During outage testing, is the length of time of the pump run adequate to reasonably assure that no problems are being experienced as a result of bearing heating? Note-this comment is applicable to the other pumps in the program that similarly have bearing temperatures that cannot be directly measured.

Comments:

R

The licensee is requesting generic relief from measurement of Pump Bearing Temperatures. The licensee stated:

"This Relief Request Basis is consistent with the requirements of ANSI/ASME Standard OM-6. "In-Service Testing of Pumps", Draft 11, which does not require bearing temperature measurements.

ALTERNATIVE TESTING:

Pump mechanical condition can be determined much more accurately by measuring bearing vibration. Paragraph IWP-4500 requires at least one displacement vibration level be read during each in-service test. The number of readings will be expanded to a minimum of two in orthogonal directions. These additional readings, in addition to the revised vibration measurement methods and acceptance criteria given in Relief Request Basis GP-3, will provide a viable means of monitoring pump mechanical condition."

5. RCIC Condensate and Vacuum Pumps G191174 Sh. 2

Q. Discuss the safety related functions of these pumps. Provide a detailed technical justification for not including these pumps in your program.

Comments: R

The licensee stated that "these pumps are non-safety related and provide no reactor shutdown or accident mitigation function. Therefore, they are not included in the program."

6. RBCCW Pumps G191159 Sh. 3

Q. The program listing for the reference drawing shows sheet 1, the pumps are on sheet 3.

Comments: R

The licensee will correct the reference.

7. Emergency Diesel Generator Auxiliaries G191162

a. Q. The diesel engine's fuel pump and clean oil return pumps are missing from the program.

Comments: R

The licensee stated that the pumps are not required for the safety related operation of the diesel. The staff agreed.

b. Q. In relief Request Basis P-12, Fuel Oil Transfer Pump Bearing Temperature measurement per IWP-3300, regarding alternate testing, is it possible to check bearing temperatures by pumping to the 5000 gallon Fuel Oil Day Tank 41-1A for the heating boilers?

Comments: LAR

The licensee will delete this relief request and provide a generic relief request as discussed under 4. above.

8. Pump RRU-18 and G191175 Sh. 1
Two check valves 16-19-101 (E-15)
and 16-19-103

Q. What are the safety related functions of the pump and two check valves?

Comments:

R

The licensee stated that:

"Pump RRU-18 and check valves V16-19-101 and V16-19-103 are components of the Torus to Drywell Pumpback System. This system is no longer in use and has been retired in place.

The Torus to Drywell Pumpback System was originally installed to maintain the 1.7 psid between the torus and the drywell. This differential pressure along with proper torus water level assure the integrity of the torus when subjected to post-LOCA suppression pool hydrodynamic forces.

The drywell-torus differential pressure is now maintained by use of the Nitrogen Inerting Supply System.

Valves V16-19-102, 103, 105, 106 and 109 are normally closed, the breaker for RRU-18 is open and the discharge piping downstream of valve V16-19-101 has been cut and capped."

9. Q. What is the technical justification for not including the Torus to Drywell pumpback system in the IST program? (No drawings provided).

Comments:

R

The licensee included his response to this question with question 8. above.

10. Q. Describe any functions that the Drywell Floor Drain pumps P-11 A/B and the Drywell Equipment Drain pumps P-15-A/B have in shutting down the reactor or mitigating the consequences of an accident.

Comments:

R

The licensee stated that these pumps are isolated during accident conditions and serve no safety function or accident mitigation function.

Valves

V-4* Service Water System

Dwg. G191159 Sh. 1&2

1. Valve V 70-1A-D and Relief Request Basis RRB-V1 (B, H-3)
- a. Q. The relief request lacks specificity regarding frequency of exercise testing. The time period should be specified. Reference IWV-3521. (Note: 24 months is normally the maximum relief that the staff will consider.)

* The V-4 number is the page number in the licensee's IST program.

General Note applicable to all relief requests: Relief requests should clearly specify what specific relief is being requested including the detailed technical basis for the specific relief being requested. Revise relief requests accordingly.

Comments:

LAR

The licensee stated that at least two tests will be conducted annually on each of the check valves with at least three months between tests. The relief request will be revised to include the basis for this testing frequency.

- b. Q. Is there a leakage requirement established for these valves in the closed position? Is prompt closure verified?

Comments:

LAR

The licensee stated that no specific valve leakage requirement is necessary to meet system performance criteria.

The minimum system performance requirement for each pump is 2700 gpm against a TDH of 250 feet (TS 4.5.D.1) This will be incorporated into the IST program.

Prompt closure of each check valve will be verified by visual observation of system pressure indicators and by observing that the non-operating pump is not wind milling.

2. Relief valves in Service Water System

Q. Provide detailed justification for not including the service water system's relief valves in the IST program and testing in accordance with IWV-3510.

Comments:

R

The licensee stated that the subject relief valves serve as thermal reliefs and as such these valves do not perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

3. RHR Motor Cooling

Q. What is the technical bases for not including: check valves 181 XC (4 total, one for each motor) and Solenoid valves SE-70-4C (4 Total)?

Comments:

LAR

The licensee stated that the above valves will be put into the program for testing as follows:

Check valves 181 XC will be designated Category C.

Solenoid valves SE-70-4C will be designated Category B.

The licensee will submit a relief request on timing for the solenoid valves.

4. Valves V 70-84A and 84 B Reference G191159 Sh. 2) (B and H-3).

Q. What is the safety related function of these valves?

Comments:

R

The licensee stated that these valves have no safety related function. These valves provide an alternate cooling path to the station air compressors.

5. Emergency Diesel Generator Cooling

- a. Check Valve 70-1 (B-9)

Q. This check valve is not in the program, however, the position of the valve appears to be of safety related importance to assure a heat sink for the emergency diesels and as such should be tested as a Category C valve.

Comments:

R

The licensee stated that the valve is a manually operated butterfly valve and is not required to be operated to assure a heat sink for the EDGs.

- b. Fill Valves On Expansion Tanks

SE-70-2A? (Drawing has no numbers) (F-8)
SE-70-2B (C-5)

Q. These valves are not in the program, however, appear to have safety importance to assure cooling of the EDGs. The valves should be included in the program and tested.

Comments:

R

The licensee stated that these valves do not perform a safety function therefore are not included in the program. The tanks are equipped for manual makeup and have a level alarm to alert operators if a level problem occurs.

6. Q. Line 24" SW 1B (Dwg. G191159, Sh. 1) appears to connect to 8" SW 12B (Dwg. G151159, Sh. 2) at match line A, however, there is no reducer shown. Is there a missing drawing? Also there is no 24" SW 1B in the "Piping Line List".

Also the 18" SW 12 line goes to 20" SW-12? Same question?

Comment:

LAR

The licensee stated that the subject service water drawings are flow diagrams and were not intended to show the detail piping configurations. The first entry in the Dwg G191159, sheets 1 and 2 is being corrected to show SW-1A-D vice SW-1A&D, otherwise the drawings fulfill their intended purpose.

V-5 Reactor Building Closed Cooling Water

1. Relief Valves G191159 Sh.3(A-4)
RBCCW HX's
SR 70-1A/B

Q. Provide detailed technical justification for excluding these two relief valves from the program.

Comments:

R

The licensee stated that these valves are thermal relief valves and therefore are not required for safe shutdown or accident mitigation.

2. Air Operated Valve (D-8)
LCV-1

Q. Does this valve operate to make up system losses of inventory? Does the valve fail open upon loss of air?

Comments:

R

The licensee stated that the valve does operate to make up system losses of inventory as an operations aid. It fails closed upon loss of air. The valve is not required to shutdown the reactor or to mitigate the consequences of an accident. The tank is equipped with a low level alarm which annunciates in the control room thus allowing for manual makeup if needed.

V-7 Service and Instrument Air, Diesel Generator Starting Air System,
Dwg. G-191160 Ref. Sh. 7

1. Pressure Relief Valves (unnumbered) on EDG Air Receiver Tanks, one on each tank, four total. (Ref. Sheet 7 of 7)

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3510.

Comments:

R

The licensee stated that these relief valves are not required to operate in shutting the reactor down or in mitigating the consequences of an accident.

2. Check valve unnumbered in line from air receiver to motor pressure switch, one for each air receiver. (Ref. Sheet 7 of 7).

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3510.

Comments:

R

The licensee stated that these instrument line valves do not perform a function in shutting down the reactor or in mitigating the consequences of an accident.

3. Pressure Relief Valves (unnumbered) on air compressors, two total.

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3510.

Comments:

R

The licensee stated these valves do not perform a function in shutting down the reactor or in mitigating the consequences of an accident.

4. EDG Air Start Solenoid Valves (Colt Industries Dwg. 1185383)

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3400.

Comments:

LAR

The licensee stated that these valves will be added to the program as Category B valves and full stroke exercised quarterly during diesel generator surveillance testing. A new relief request will be generated since the valves are fast acting valves and difficulty exist in the measuring and trending of stroke times.

5. Valve V72-78 A-D and V72-80 A-D Dwg. G191160 Sh. 7

Q. Do these valves have to meet a leakage criteria to protect against the loss of receiver redundancy?

Comments:

R

The licensee has not required these check valves to meet a leakage criteria. The proper closure of the check valves is determined by their capability to maintain normal receiver pressure without excessive running of the compressor.

6. Relief Request Bases V5

Q. Revise to show compliance with requirement of IWV-3423 regarding adjusting to functional maximum pressure differential value.

Comments:

LAR

The valves are currently tested at accident pressure of 44.0 psig. The licensee stated that a generic relief request bases will be provided in the program to satisfy compliance with IWV 3423 IWV-3427.

7. Instrument Air System Ref. G191160 Sh. 4

Q. What is the safety function of check valves:

Check valve next to V 72-154 and unnumbered (L-6)

V 72-51A
V 72-155 (Check valve is next to and unnumbered)
V 72-86A
V 72-86B
V 72-51B
V 72-49A
V 72-49B
V 72-67A
V 72-67B

Comments:

LAR

The licensee stated that the unnumbered valves are V72-154C and V72-155C. The drawing is being corrected to incorporate the numbers. The licensee stated that none of the listed valves perform safety functions required to shutdown the reactor or mitigate the consequences of an accident.

8. Relief Request Basis V6 Dwg. G191160 Dh. 3 (K-12 and 15)
for Valves V72-89 B/C

Q. Relief request as written does not show compliance with exercise testing frequency under IWV-3522. Revise to meet Section XI.

Note: The leak test requirement Ref. RRB-V5 needs to be revised to comply with IWV-3426 and IWV-3427, Analysis of Leakage Rates and Corrective Action, respectively.

Comments:

LAR and OI-L

The licensee stated that the subject valve closure will be verified during Appendix J testing on a refueling frequency.

Regarding Paragraph IWV-3426, Analysis of Leakage Rates:

The licensee stated that leakage rates for valves being tested under Appendix J are covered by Appendix J and the Technical Specification.

Regarding IWV-3427, Corrective Action:

The licensee stated that a new relief request will be included in the program to cover Vermont Yankee's position for compliance with IWV-3427 (and IWV 3426).

The staff stated that the licensee's program must be equivalent to or more conservative than IWV-3427 in order to be acceptable to the staff.

Note: The code IWV-3427, Corrective Action, requires for poor performers (leaking valves) that testing be at increased frequency, i.e., cold shutdown. The code stipulates repair or replace valves that will exceed the maximum permissible leakage rate by greater than 10% on a cold shutdown frequency. Vermont Yankee's response focus is refueling frequency as opposed to the Code. Open item for the licensee.

9. Check Valve V72-103 Dwg. G191160 Sh. 3

Q. What is the basis for specifying the valve to be passive? The valve is categorized as AC, however, the exercise requirements are not specified.

Comments:

R

The licensee stated that the subject instrument air system check valve is considered passive as it is not required to change position to accomplish its safety function of containment isolation. A normally blanked off spectacle flange and other normally closed valves isolate the instrument nitrogen subsystem from the instrument air system.

10. Check valves

Q. What is the safety related function of these valves?

V-72-70 A/B	G191160	Sh. 3 (L-17)
V-72-26 A/B	G191160	Sh. 3 (L-12)
V-72-26 G/H	G191160	Sh. 3 (L-11)
V-72-68 A/B	G191160	Sh. 3 (J-11)
V-72-37 A/B	G191160	Sh. 6 (L-7)

Comments:

R

The licensee stated that none of the subject valves perform a safety function to shutdown the reactor or maintain the reactor in a safe shutdown condition or to mitigate the consequences of an accident.

V-8 Emergency Diesel Generator Fuel Oil System Dwg. G191162

1. Q. Is valve LCV-3 (D-5) required to operate at anytime the EDGs are responding to an accident condition?

Comments:

R

The licensee stated that the subject valve is normally closed and fails, closed upon a loss of instrument air. Past surveillance testing has shown EDG operability not to be affected regardless of the valves position. The valve is not required to operate during accident conditions.

2. Relief Valves 3A and 3B (C-4)

Q. Provide detailed technical justification for not including these valves in the program and testing per IWV-3510.

Comments:

R

The licensee stated that these valves do not perform a safety function to shutdown the reactor or mitigate the consequences of an accident.

3. Q. Two relief valves and four check valves are shown on the drawing at the EDG. Provide your detail technical justification for not listing the valves in the program.

Comments:

R

The licensee stated that for these valves proper operation is verified during the current surveillance testing of the engines.

4. Clean Oil Tank (D-10)

- a. Q. How is the tank vented?
- b. Q. Are there any check valves installed in the pump discharge piping?

Comments: R

The licensee provided a sketch of the clean oil tank and piping. The tank is vented to atmosphere from a standpipe placed at the top of the tanks.

There are no check valves. The tank collects clean oil leakage from around the diesel. The licensee stated that failure of the clean oil pump would not preclude the diesel from performing its safety related function.

5. EDG Lube Oil System

- Q. What are the drawing numbers that show this system? (No drawings were provided.)

Comments: R

The EDG lube oil system is shown on drawing 5920-4150.

V-9&10 Nuclear Boiler G191167

1. Relief Valves SR2-14E-L and RRB V7 (L-11)

- Q. Under "Alternate Testing", RRB V7 should also specify exercise testing during refueling outages.

Comments: LAR

The licensee stated that program definition will be provided to show that the cold shutdown definition will include refueling outages.

2. Relief Valves SR2-14 A-D (L-11)

- Q. Provide your technical justification for not testing these relief valves.

Comments: R

The licensee stated that Safety Relief Valve Discharge Line (SRVDL) vacuum breakers SR-14 A-D do not perform a safety function and need not be included in the ISI Program.

In 1980, Vermont Yankee performed modifications to the torus and associated LOCA load mitigation equipment as a result of the Mark I Containment Long Term Program.

Analyses on the safety relief valve discharge lines indicated that the 2-inch vacuum breakers (SR2-14 A-D) did not have enough throat area to equalize SRV/DL-Drywell pressure without the occurrence of a very high water leg in the line. This water leg, in turn, would produce intolerable thrust and dynamic pressure loads on the piping. To reduce these loads, two redundant 10-inch vacuum breakers were installed in each line to replace SR2-14 A-D.

Vacuum breakers SR2-14 A-D were retired in place and need not function to aid in shutting down the reactor or in mitigating the consequences of an accident. The eight new vacuum breakers, SR2-14 E-L, are included in the IST program.

3. Valves V2-37A (check) (E-7)
S1A (solenoid operated) (C-8)

Q. Provide your detailed technical justification for not including these valves (one set for each relief valve).

Comments:

LAR

The licensee stated that these valves will be added to the program and will be tested on a refueling frequency, a relief request will be provided to support the refueling frequency surveillance testing.

4. RRB V 11 For Safety and Relief Valves

Q. The VY testing frequency of testing all valves every two refueling outages is more conservative than the Code frequency of testing all valves every five years. However, the relief request does not adequately address the IWV-3513 additional test aspects regarding corrective action to be taken in the event a failed valve is identified. The relief request states that additional testing is unreasonable per IWV 3513, however, provides no bases for handling the failure issue. Provide your technical bases for handling the valve failure issue and specify alternate requirements.

Comments:

LAR

The licensee stated that failure of the Main Steam Safety of Relief Valve to function within the required parameters on test would result in the analysis and reporting of such failures in accordance with the Licensee Event Report system, 10 CFR 50.73. Per 10 CFR 50.73(b), each LER shall contain an assessment of the root cause, safety consequences and implications of the event and a description of any corrective actions planned as a result of the event, including the need for additional testing and steps to be taken to reduce the probability of similar events occurring in the future.

The licensee will revise the relief request bases to address the part of the code that is practical and not practical to be met.

5. Feedwater Valves V2-27A (F-3)
V2-96A (H-3)
and RRB V8

Q. These valves should complete with the analysis of Leakage Rates and Corrective Action Requirements, Paragraphs (IWV-3426 and IWV-3427, respectively. The relief request should be revised accordingly.

Comments:

LAR

The licensee responded to this item subsequent to the meeting in a telephone discussion between the staff and Don Reid and others on October 28, 1987.

The subject two outboard feedwater check valves will be local leak tested under Appendix J on a refueling frequency. The valves will be full stroke exercise tested to the open and closed positions on a refueling frequency. An appropriate relief request will be provided. A generic relief request will be provided to cover Vermont Yankee's position for compliance with IWV-3426 and IWV-3427.

The staff stated that the licensee's program would need to be equivalent to or more stringent than IWV-3426 and IWV-3427 in order to be acceptable to the staff.

6. Feedwater check valves V2-28 A/B (F-4)(H-4)
and RRB V9

Q. Note: Valves have a safety related function to close as an isolation valve and a safety function to open upon HPCI & RCIC injections. No relief from quarterly exercise testing was included. Do you intend to exercise quarterly?

The valves should comply with the analysis of Leakage Rates and Corrective Action Requirements, Paragraphs IWV-3426 and IWV-3427, respectively. The relief request should be revised accordingly.

Comments:

LAR

The licensee provided an additional response to this item subsequent to the meeting in a telephone discussion between the staff and Don Reid and others on October 28, 1987.

The licensee stated that the subject two inboard feedwater check valves had received an exemption from leak rate testing under Appendix J. (Reference SER by letter D. G. Eisenhut, NRR, to J. B. Sinclair, VYPC dated August 19, 1983). The licensee stated that the motor operated feedwater heater valves would be closed as backup in the event containment isolation is required. Closure of the motor operated heater valves is also required under Appendix J whenever containment isolation is required (reference the August 19, 1983, SER).

The licensee stated that the subject valves will be exercised to the full open position at startup and an ALARA bases for not full closure exercising would be provided. The licensee also stated that the valves have a hard seat and require a high pressure to seal them closed. The piping configuration further makes it impractical to conduct a pressure test to verify closure.

7. Process Sampling Valves

V2-39	(L-4)
V2-40	(L-3)
RRB-V8	

Q. These valves should comply with the analysis of Leakage Rates and Corrective Action Requirements, Paragraphs IWV-3426 and IWV 3427, respectively. The relief request should be revised accordingly.

Comments: LAR

The licensee stated that these Code requirements would be covered by a generic relief request.

8. Steam Drain Valves:

V2-74	(D-10)
V2-77	(D-13)

- a. Q. Provide your detailed technical justification for not exercising and stroke time testing these Category A valves.
- b. Q. The valves must comply with the Analysis of Leakage Rates and Corrective Action Requirement, Paragraphs IWV-3426 and 3427, respectively.
- c. Q. The relief request RRB-V8 needs revising accordingly.

Comments:

LAR

The licensee stated:

- a. The valves are presently exercised and stroke timed. The program valve listing will be revised to reflect this testing.
- b. These code paragraphs will be covered by a generic relief request.
- c. The relief request RRP-V8 will be deleted.

9. MSIVs

V2-80 A-D	(D, F, G, H-10)
V2-86 A-D	(D, F, G, H-13)

- a. Q. The valves must comply with the Analysis of Leakage Rates and Corrective Action Requirements, Paragraphs IWV-3426 and 3427, respectively. Revise the relief request RRV-V8 accordingly.

Comments:

R

The licensee stated that a generic relief request will be provided to cover Vermont Yankee's position regarding compliance with IWV-3426 and IWV-3427.

10. Excess Flow Check Valves

G191167

SL-23	(C-3)
SL-301F	(D-3)
SL-301B	(D-3)
SL-301A	(D-3)
SL-301E	(D-3)
SL-97B	(M-12)

Describe the safety related function of each of these check valves.

Comments:

R

The licensee stated:

- SL-23 This valve is not required for reactor shutdown or accident mitigation.
- SL301 A, B, E, F and SL-97B These valves were previously used on reactor coolant pressure indicating lines and the indications and connections to the reactor coolant system has been deleted by a design change. They are not required to be operable and now perform no safety function. Valve SL-97B has a closed manual isolation valve (RV-98B) upstream of it and is therefore also not required.

11. MSIV Supply Check Valves

IA 87 A-D

(B-12)

CA 87 A-D

(B-10)

Q. Provide detailed technical justification for not including these valves in the program.

These valves appear to assure that the MSIV accumulators remain at pressure in the event of a loss of header pressure. They appear to be Category C valves.

Comments:

LAR

The licensee stated that these check valves are not needed to function for the MSIVs to perform their safety function since the MSIVs are spring loaded "fail safe" to close. Based upon this, the valves are not required to be in the IST program.

The licensee also stated that the main Steam relief valve air supply accumulator check valves, V2-37A-D, do perform a safety function, are presently tested and will be added to the IST program. The licensee will request relief from IWV-3426, analysis of Leakage Rates, for these valves based upon a previous staff safety evaluation letter, Vassallo, NRC, to Capstick, VYNPC, dated March 4, 1985. The licensee intends to meet IWV-3421 to demonstrate seat leak tightness.

V-11 Core Spray System

Reference Drawing G191168

1. SR 20 A and B

Safety Relief Valves

Q. Provide a detailed technical basis for not including these valves in the program and testing per IWV 3510?

Comments:

R

The licensee stated that the subject relief valves are not required to perform a specific function in shutting down the reactor to the cold shutdown condition or in mitigating the consequences of an accident.

2. MOV 12 A and 12 B

(Outside containment)

Check Valves V13A and V13B

(Inside containment)

Q. These valves provide the redundant barrier between high and low pressure piping. Provide detailed technical justification for not designating as Category A and leak testing.

Comments:

OI-S and LAR

The licensee stated that the subject valves will be designated Category A for the motor operated valves and Category AC for the checks valves.

The licensee does not individually leak test these valves. The 12A and 12B valves have continuous pressure monitoring downstream which is an acceptable method to the staff for determining their leak tight condition. However, the leak tight condition of the check valves 13A and 13B is not assessed via leak testing. These check valves provide redundancy for protection of the low pressure piping.

The NRC Committee to Review Generic Requirements (CRGR) currently has under generic review requirements for pressure isolation valves that comprise the barrier between high pressure and low pressure piping. Pending the findings from the CRGR regarding this matter a staff position regarding leak rate testing of check valves 13A and 13B can be made.

This is an open item for the staff and licensee.

3. MOV - V 7A and 7B (CS Pump Suction)

Q. What function(s) do the valves serve to mitigate the consequences of an accident. (The valves are not in the IST program).

Comments:

R

The licensee stated that these valves do not perform a safety function. The valves receive no automatic initiation signals and are open during post accident conditions for operation of the system.

4. Excess flow check valve SL-25

Q. Why is this valve not tested similarly to SL 31 A&B? (The valve is not on relief request RRB-V16).

Comments:

R

The licensee stated that the valve is included in the program as valve 2-3-25 under V-26 Nuclear Boiler Vessel Instrumentation. The valve is covered by RRB-40.

5. Check Valves 33A and 33B (CS pressurizing lines)

Q. Do these valves close to mitigate an accident? Discuss their function.

Comments:

LAR

The licensee stated that these check valves must close to assure that core spray flow does not bypass the core. The valves must open to permit flow into the core spray piping. The licensee will add the valves to the IST program to verify their proper operation. A relief request will be incorporated into the IST program to cover what testing is/is not practical for these check valves.

V-12-14 High Pressure Coolant Injection System (HPCI) G191169, Sh. 1

1. Steam Valves and RRB-V17:

V23-15

(E-5)

V23-16

(F-7)

Q. The valves must comply with the Analysis of Leakage Rates and corrective Action Requirements paragraphs IWV-3426 and 3427, respectively. Revise the relief request RRB-V17 accordingly.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

2. Excess Flow Check Valves:

SL 23-37 A-D or A-L

(F, G-5)

Q. Which is correct? The "Valve No." listing appears to have a typo. The drawing reflects A-D.

Comments:

R

The licensee stated that SL 23-37 A-D is correct and the listing has been corrected.

3. Check Valves and RRB-V20:

(N-7)

V 23-61

Q. The relief request basis wording is unclear regarding assuring that the valve's exercise test assures the exercising of the valves to the full open position.

Comments:

LAR

The licensee stated that the relief request RRB-V20 will be revised to specify full stroke exercising.

4. Check Valves (K-5)
V 23-12 and V 23-65

Q. These valves need to open to drain condensate and the exhaust steam drain pot. Provide a technical justification as to why the valves aren't exercise tested?

These valves also appear to perform a containment isolation function; if so, should be Category AC and comply with IWV-3426 and IWV-3427.

Comments:

LAR

The licensee stated that both valves are in the IST program and are exercised tested during the monthly technical specification required HPCI test at full flow.

The check valves will be designated AC. The licensee will leak test in accordance with Appendix J and will provide a generic relief request regarding compliance with IWV-3426 and IWV-3427.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

The licensee stated that valves SSC-23-13 and V23-36 will also be added to the IST program and be designated Category AC.

5. Check Valves (1-3)
V 23-842 and V 23-843

Q. These valves appear to be needed to open during HPCI operation, if so, they should be exercised tested. These valves also appear to perform a containment isolation function, if so, should be Category AC and comply with IWV-3426 and IWV-3427.

Comments:

LAR

The licensee stated that the subject valves will be added to the IST program and designated Category AC. The valves will be full stroke exercised during HPCI operation.

The licensee will incorporate a generic relief request relative to meeting IWV-3426 and IWV-3427.

6. Relief Valves G191169 Sh. 2
V 23-34 (D-9)
V 23-66 (J-12)

Q. Provide detailed technical justification for not having these valves in the IST program, and testing the valves as required by IVV 3510.

Comments: R

The licensee stated that the subject valves are not required to operate for safe shutdown or to mitigate the consequences of an accident.

7. Air Operated Valve (K-12)
V 23-54

Q. Provide detailed technical justification for not having the valve in the IST program and designating Category B.

Comments: R

The licensee stated that operation of V23-54 is not required and has no impact on HPCI operation. It is not required to operate for safe reactor shutdown or to mitigate and accident.

8. Check Valves (L-11)
V 23-130 and V 23-131

Q. Provide detailed technical justification for not having these valves in the IST program and designating as Category C valves.

Comments: OI-L

The licensee stated that additional review will be required to resolve the staff concern. Open item for the licensee.

9. Air Operated Valves G191169 Sh. 2
V 23-39 and 40 (M-11)

Q. What is the safety related function of these valves?

Comments: R

The licensee stated that these level control valves are not necessary for proper HPCI operation. The valves function during HPCI standby conditions therefore are non-safety related.

10. Drain Valves G191169 Sh. 1 (H-17 & J-1)

V 23-53 (Air Operated)	(H-17)
V 23-42 (Air Operated)	(J-16)
V 23-43 (Air Operated)	(J-16)
V 23-149 (Check Valve)	(I-16)

Q. Provide detailed technical justification for not having these valves in the IST program.

Comments:

R

The licensee stated that the subject valves are not required for HPCI operation. The valves serve to drain condensate from the HPCI turbine steam supply line, however, if a high level occurs in the steam supply line drain pot a high level alarm is annunciated in the control room.

V-15 Control Rod Drive Hydraulic System G191170

1. Valve VS-181 and RRB-V22 J-21

Q. The relief request needs to incorporate testing at refueling frequency in addition to cold shutdown.

The program's valve listing drawing coordinates should be J-21, not I-21.

Comments:

LAR

The licensee stated that definition will be made in the program to reflect testing during refueling in addition to cold shutdown.

The coordinates in the IST Program will be corrected to show J-21.

2. Valves V13-115 (B-16)

Q. The charging header check valves are active during reactor scrams to aid in control rod inserting and safe reactor shutdown. Provide detailed technical justification for not including these valves in the program.

Comments:

LAR

The licensee stated that the check valves will be put into the IST program as Category C and tested to assure that they will go to the full open position.

V-16 Standby Liquid Control System

Drawing No. G191171

1. Relief Valves SR-39A and 39E (G, K-7)

Q. These valves should be designated Category C and tested per IWV-3510.

Comments:

R

The licensee stated that these valves do not operate to shutdown the reactor or mitigate the consequences of an accident. The valves are required to be tested under the technical specification 4.4 A.2. to verify that their set point is between 1400 and 1490 psig.

2. Check Valves V 11-16 and 17 (G and H-2)

Q. Relief Request Basis V24 refers to TS Table 4.7.2.b applicable to containment isolation valves as opposed to component operational readiness testing under Section XI, IWV-3400. Provide detailed technical justification for not testing in accordance with Section XI.

Comments:

LAR and OI-L

The licensee stated that the valves are exempt from local leak rate testing under Appendix J. These check valves (Category AC) are located at the primary containment boundary, one located inside and one located outside. The SBLC explosive valves, located outside containment, seal the lines normally.

However, the staff's concern is that once the explosive valves are fired and the SBLC system has exhausted its supply or is shutdown for any reason, the subject valves would be needed to close and seal against an event where reactor pressure remains elevated. None of the remaining SBLC valves are leak tested under the IST program. There is low pressure piping upstream including tanks that are vented to the atmosphere. Leak testing of the subject two check valves is an open item for the licensee.

V-17 & 18 Residual Heat Removal System

G191172

1. Motor Operated Valves: V 10-17 and RRB V26 (G-8)
V 10-18 (F-8)

a. Q. The relief request needs to clearly state the detailed technical basis for the specific relief requested. The relief request basis states that the valves are presently exempted, per Tech. Spec. Section 4.7.2 from leak testing, however, a basis for this statement has not been found.

Comments:

LAR

The subject valves are reactor coolant system high to low pressure piping isolation valves. Valve V10-17 has pressure monitoring down stream which is acceptable to the staff for determining the leak tight integrity for this valve.

The licensee stated that valve V10-18 does not receive a leak test.

During the meeting the staff discussed using an existing 3/4 inch line, below valve V10-18 as a possible way to monitor leak tightness of the valve.

During a followup telephone discussion on December 22, 1987, the licensee committed to running a leak test on MOV V10-18 by monitoring leakage through the 3/4 inch line when the vessel hydro is conducted at a refueling frequency. This will provide resolution to this staff's concern.

- b. Q. These valves must comply with the Analysis of Leakage Rates and Corrective Action Requirements of the Code paragraphs IWV-3426 and IWV 3427.

Comments:

OI-L

The licensee needs to reevaluate their response to IWV-3426 and IWV-3427 for the subject valves. Open item for the licensee.

2. Valves: V 10-26A/B (C-7)(C-11)
Q. Same comment as 1.a. and b. above.

Comments:

LAR

The leak rate testing requirements of Appendix J apply. The staff notes that the subject drywell spray valves have been exempt from Appendix J type C leak rate test.

3. Valves V10-27A/B (D-6)(D-12)

Q. These valves are the first closed gate valves off of the reactor coolant loops to protect low pressure piping. Provide detailed technical justification for not designating as category A and leak testing. (Reference GDC-54)

Comments:

OI-S and OI-L

This valve is the normally closed high pressure motor operated globe valve protecting low pressure piping downstream and as such should be designated Category A. There is one normally closed check valve between the reactor coolant system and the subject valves. The licensee does not leak rate test the subject valves nor has it been shown that pressure monitoring downstream is capable of ascertaining the valves leak tight condition.

The NRC Committee to Review Generic Requirements (CRGR) currently has under review requirements for pressure isolation valves that comprise the barrier between high pressure and low pressure piping. Pending the findings from the CRGR regarding this matter, a staff position on leak rate testing of the subject valves can be made.

Open item for the staff and licensee.

- 4. Valves V10-31A/B (C-B) (C-10)

Q. Same comment as 1.a. & b. above.

Comments:

LAR

The leak rate testing requirements of Appendix J app notes that the subject dry well spray valves have been Appendix J type C leak rate test.

The staff
ampt from

- 5. Valve V 10-32 (C-9)

Q. Same comment as 1.b. above.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

- 6. Valve V 10-33 (A-7)

Q. Same comment as 1.b. above.

Comments:

LAR

Same response at item 5. above.

7. Valves V10-34 A/B (E-4) (E-14)
Valves V10-38 A/B (E-4) (-13)

Q. These valves are the first normally closed valves coming from the suppression chamber (Reference GDC-54). Same comment as 1.a. and 1.b. above.

Comments:

LAR

The leak rate testing requirements of Appendix J apply. The staff notes that the subject torus spray and level supply valves have been exempt from Appendix J type C leak rate test.

8. Valves V10-39 A/B (D-4) (D-14)

- a. Q. Same comments as 1.a. and 1.b. above. (Note: this is the second valve from containment.)

Comments:

LAR

The leak rate testing requirement of Appendix J apply.

- b. Q. Provide detailed justification for not quarterly stroke testing these valves.

Comments:

LAR

The licensee stated that the valves are quarterly stroke tested. The program will be corrected to reflect quarterly stroke testing.

9. Check Valves V10-46 A/B (E-7) (E-11)

Q. These valves are listed as Category C, however, they are the inside containment isolation valves and should be categorized as AC and leak tested to assure protection of low pressure piping.

Comments:

OI-S and OI-L

The valve is a normally closed check valve serving as a pressure isolation valve protecting low pressure piping downstream. This is the first normally closed valve from the reactor coolant system.

The valve should be designated Category AC. The licensee does not leak rate test the subject valves neither is there continuous pressure monitoring downstream.

The NRC Committee to Review Generic Requirements (CRGR) currently has under review requirements for pressure isolation valves that comprise the barrier between high pressure and low pressure piping. Pending the findings from CRGR regarding this matter a staff position regarding leak rate testing of the subject valves can be made.

Open item for staff and the licensee.

10. Valves V10-89A/B (M-1) (L-17)

Q. Do the valves have a fail safe position and if so, are they exercised to this position?

Comments: R

The licensee stated that the valves have no fail safe position. They are remote manually operated.

11. Valves V10-16 A/B (I-6) (I-12)

Q. These valves are the first isolation valves outside containment and as such appear to be Category A as they serve an isolation function (Reference GDC-54). Provide detailed justification for not designating Category A.

Comments: R

The leak testing requirements of Appendix J apply. The staff notes that the subject valves have been exempt from Appendix J leak rate testing.

12. Check Valves V10-19 A-D (K-6 & 12)
(J-6 & 12)

a. Q. These valves are the second isolation valves outside of containment and as such it appears these valves should be Category AC and leak tested.

Comments: R

The leak testing requirements of Appendix J apply. The staff notes that the subject valves have been exempt from Appendix J leak rate testing.

b. Q. It is not clear (Reference Note 6) that the exercise testing verifies full opening of these valves.

Comments: LAR

The licensee stated that Note 6 will be revised to reflect proper opening of the valves.

13. Relief Valves

V10-SR-35 A/B	(D-2) (D-15)
V10-SR-40	(G-8)
V10-SR-72 A/B/C/D	(K-7) (K-11) (J-7) (J-11)
V10-SR-80 A/B	(K-3) (K-14)
V10-SR-86 A/B	(K-3) (K-14)
V10-RV-210 A/B	(D-12) (D-5)

Q. Provide detailed justification for not designating these valves Category C and testing per IWV-3510?

Comments:

R

The licensee stated that the subject valves are not required to operate for safe reactor shutdown are to mitigate the consequences of an accident. The valves serve a thermal relief function.

14. Motor operated Valve V10-20

(H-4)

Q. This valve has a safety function as described in FSAR 4.8.5 "to supply either loop from the pumps in the other loop". Its operational readiness should be verified and, therefore, included in the program.

Comments:

LAR

This licensee stated that the subject valve does not perform a safety function. The motor leads have been disconnected. The licensee stated that the FSAR will be updated.

15. Valves

V10-15A/B/C/D (K-7) (K-10) (J-7) (J-10)

Q. Are these valves used to bring the reactor to a cold shutdown condition or in mitigating the consequences of an accident? If so they should be included in the program.

Comments:

LAR

The licensee stated that the shutdown cooling suction valves are required to open to provide shutdown cooling. The valves will be included in the IST program as Category B valves.

16. Valves

V-10-13A/B/C/D (K-8) (K-9) (J-9) (J-8)

Q. Are these valves used to bring the reactor to a cold shutdown condition or in mitigating the consequences of an accident? If so they should be included in the program.

Comments:

LAR

The licensee stated that these valves are required to close when the RHR system is aligned for shutdown cooling and will be included in the IST program and designated as Category B valves.

V19-21 Reactor Core Isolation Cooling System (RCIC)

G191174, Sh. 1

1. Motor Operated Valves and RRB-V30

V13-15

(D-7)

V13-16

(D-8)

Q. The staff position is that the Category A valve leak rate requirements are fulfilled by 10 CFR 50, Appendix J, requirements for CIVs and that relief from the Section XI leak rate testing requirements presents no safety problem. However, the licensee must comply with the Analysis of Leakage Rates and Corrective Action Requirements Paragraphs IWV-3426 and 3427 unless specific relief is requested from these paragraphs and subsequently granted by NRC. Revise the Relief Request.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

2. Check Valve V13-22 and RRB-V31

(G-9)

Q. Frequency does not include refueling frequency or (24 month maximum). Revise relief request and testing frequency.

Comments:

LAR

The licensee stated that their definition is that a refueling outage is a subset of cold shutdown. The licensee will provide definition in his program to clarify this intent.

3. Motor Operated Valve V13-41 (N-10)

Q. If this valve serves a containment isolation function with a specified leak rate, it should comply with IWV 3426 and IWV-3427 (reference item 1. above).

Comments: LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

4. Check Valve V13-40 and RRB V-33 (N-11)

Q. Relief request basis does not clearly state words to indicate full stroke exercise testing is required.

Comments: LAR

The licensee stated that the subject relief request will be revised to state full stroke exercising is required and plant procedures will be revised accordingly.

5. Relief Valves G191174, Sh. 2

Q. Provide detailed technical justification for not including these valves in the program and testing as Category C valves as required by IWV-3510.

SR-25 (B-7)
SR-26 (I-7)
SR-27 (J-14)

Comments: R

The licensee stated that these valves are not required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

6. Motor Operated Valve V-1 (13-D)

Q. What is the safety related function of this valves?

Comments: R

The licensee stated that this valve serves no safety related function. It is not required to function to allow RCIC initiation for accident mitigation.

7. Check Valves (K 13 & 10)

V13-70 and V13-133

Q. Provide detailed technical justification for not including these valves in the program.

Comments: OI-L

The licensee stated that the safety related functions of these valves would be reviewed. This is an open item for the licensee.

8. Air Operated Valves

V13-12 (L-10)
V13-13 (L-10)

Q. Provide detailed technical justification for not including these valves in the program.

Comments: R

The licensee stated that the subject valves are not required to function for proper RCIC operation and were therefore not put into the IST program.

9. Air Operated Valves G191174 Sh. 1

V13-32 (H-17)
V13-34 (K-17)
V13-35 (K-17)

Check Valve
V13-140 (I-17)

Q. Provide detailed technical justification for not including these valves in the program.

Comments: R

The licensee stated that the subject valves were for operating convenience and were exempt (under, IWV-1200) from the IST program. The valves are not necessary for proper RCIC operation.

10. Check Valves

Q. Provide detailed technical justification for not including these valves in the program.

V13-SSC-10 (K-8)
V13-29 (J-10)
V13-38 (K-11)

Comments:

LAR

The licensee stated that the subject valves will be added to the IST program since they are required to open for proper operation of the system. The subject valves and the following valves which are already in the program, SSC-13-9, V13-27, and V13-50, will all be designated as Category A. The licensee will provide a generic relief request for IW-3426 and IWV-3427.

11. RRB-V33 for valve V13-40

Q. The alternate testing needs to be revised to clearly assure that the valve is full stroke exercised.

Comments:

LAR

The licensee stated that the subject relief request will be revised to specify full stroke exercising.

V-22 Primary Containment and Atmospheric Control

1. Drywell to Torus Vacuum Breakers G191175 Sh. 1 (J-8)

Q. The program list Valves V16-19-5A-J, however, the drawing indicates A-F and G&H. Which is correct?

Comments:

R

The licensee stated that the program was designated correctly.

2. Relief Request RRB V-36

Q. This relief request or another needs to address IWV-3420 regarding pressure differential testing at lower than functional differential pressures, IWV-3426 Analysis of Leakage Rates and IWV-3427 Corrective Action.

Comments:

R

The licensee stated that the relief request was being deleted since the testing was being done in accordance with Appendix J at the accident pressure Pa = 44 psig. The licensee will use a generic relief request to cover IWV-3426 and IWV-3427.

3. Valves V16-19-12 A/B and RRB V-38 G191175 Sh. 1 (K and M-16)

Q. The relief request does not address testing at cold shutdown and refueling frequency. Quarterly exercise testing was not specified as a requirement in the valve table.

Comments:

LAR

The licensee stated that the relief request would be revised to reference cold shutdown and refueling. The vacuum breakers cannot be exercised during power operation.

- 4. Check Valves G191175 Sh. 1 (I-11)

V16-19-51 and V 16-19-52

Q. What is the safety related function of these valves?

Comments:

LAR

The subject valves are not used and do not perform a safety function. The system is isolated by closed manual valves: V16-19-53 and V16-19-54. As added assurance, valve V16-19-34 will be locked closed.

V-23 Radwaste Systems

G191177 Sh. 1

- 1. Valves V20-82, 83, 94, 95 and RRB-V59

Q. The leak testing does not include requirements of IWV-3426 and IWV-3427 for analysis of leakage and corrective action requirements of the Code.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

- 2. Dry Well Sump Check Valves

80A	(D-2)
80B	(D-3)
90A	(I-2)
90B	(I-3)

Q. Provide detailed technical justification for not including these valves in the program and categorizing as AC.

Comments:

R

The licensee stated that the subject valves perform no function in shutting down the reactor or in mitigating the consequences of an accident. The lines these valves are in are isolated by a Group 2 containment isolation signal.

V-24 Reactor Water Clear Up System

G191176 Sh.

1. Valves

V12-15	(D-2)
V12-16	(D-3)
V12-68	(C-11)

Q. These valves are listed as Category B. The valves serve as primary containment isolation valves and have a safety function to protect the reactor core in case of a pipe break in the clean up system. They isolate on a reactor water low level. These valves should be Category A and leak tested.

Comments:

LAR

The licensee stated that the valves will be designated Category A. Leak rate testing will be done under Appendix J. The licensee will have a generic relief request for IWV 3426 and IWV 3427.

2. Relief Valves

V12-SR-82	(F-10)
V12-SR-85	(D-10)
V12-SR-84	(G-12)

Q. These valves are not included in the program, however, appear to have a safety function to protect the system against over pressurization. What is the basis for not designating the valves as Category C and testing in accordance with IWV-3510?

Comments:

R

The licensee stated that the subject relief valves are thermal relief valves and do not operate to shutdown the reactor or mitigate the consequences of an accident.

3. Check Valve

V12-62	(B-5)
--------	-------

Q. This valve appears to be a Category C valve since it functions to close to assure that RCIC flow goes to the core, however, it is not in the program.

Comments:

R

The licensee stated that the subject check valve is not required to operate since motor operated valve V12-68 would already be closed to isolate the subject line. Valve V12-63 is in the IST program, therefore, V12-62 is not included.

V-26 Nuclear Boiler Vessel Instrumentation

1. RRB-V40

Dwg. G191267

Q. The Code stipulates exercising the valves every 3 months or if the valves cannot be exercised every 3 months during plant operations, the valves shall be full stroke exercised during cold shutdown. The relief request for testing does not address the Code required frequency of cold shutdown nor is technical justification provided for not meeting the cold shutdown frequency.

Comments:

LAR

The licensee stated that the testing of these excess flow check valves can only be done when the reactor vessel is at pressure but not operating. This test condition occurs during the reactor vessel hydrostatic test performed during refueling outages. The relief request will be revised to include the required clarification information.

V-27&28 Containment Atmosphere Dilution

Dwg. VY-E-75-002

1. General Comment: Valves which are required to operate or function to bring the reactor to cold shutdown conditions or in mitigating the consequences of an accident should be included in the IST program and tested in accordance with requirements of the Code (Reference IWV-1100). If the valve is required to operate under these conditions, testing is required under the Code and any relief requested from this testing must have a technical basis provided for the specific relief requested. (Also reference to the staff note under item 2. of Primary Containment and Atmospheric Control).

Further, the NRC staff has identified rapid-acting power operated valves as those which stroke in 2 seconds or less. Relief from the trending requirements of Section XI (Paragraph IWV-3417(a)) will be given for these valves since variations in stroke times will be affected by slight variations in the response time of the personnel performing this tests. However, the staff does require that the licensee assign a maximum limiting stroke time of 2 seconds to these valves in order to obtain this Code relief.

Q. The relief request bascs in RRB 41, 42 and 43 lack specificity regarding the detailed technical bases for the relief requested. These relief requests need revision.

Comments:

LAR

The licensee stated that revised relief request(s) would be submitted to cover IWV-3417(a). The licensee stated that they will comply with 3417(b) or provide an appropriate relief request. The RRB 41, 42 and 43 will be deleted and the new generic relief request will be referenced.

2. Q. The following valves are designated as passive, however, they serve an active function with the Primary Containment Isolation System (PCIS), therefore, should be designated "Active" and exercised and stroke time tested:

VG-75A-3, -4	(J-14)
VG-9 A/B	(G-12, I-13)
VG-22 A/B	(B-16, E-16)
NG-11 A/B	(G-9)
NG-12 A/B	(I-8)
NG-13 A/B	(I-9)

Comments:

LAR

The licensee stated that VG-75A-3, -4 PCIS signals were removed in order to ensure continuous indication of containment hydrogen concentration. These valves do not receive any automatic isolation signals and are repositioned only by direct operator action. All of the valves will be designated as "active" in the valve listing based upon their PCIS function. All of the valves with the exception of VG-22 A/B are "rapid acting" solenoid valves (VG-22 A/B are motor operated). All will be stroked and timed. A relief request for the rapid action valve stroke time trending will be added to the program.

3. Q. The following valves are designated for alternate testing in accordance with Appendix J. These valves need to comply with IWV-3426, Analysis of Leakage Rates and IWV-3427, Corrective Action of the Code.

FS0-109-76A/B	(L-14)
VG-23	(J-19)
VG-26	(J-19)
VG-9 A/B	(G-12, I-13)
VG-22 A/B	(B-16, E-16)
NG-11 A/B	(G-9)
NG-12 A/B	(I-8)
NG-13 A/B	(I-9)

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

- 4. Q. Technical Specification Table 4.7.2.b require the following valves to be operable, however, the program does not operability test (exercise or stroke time) the valves. Provide detailed technical justification for not including this testing in the program.

Valves:	VG-24	(L-11)
	VG-25	(L-11)
	VG-33	(L-11)
	VG-34	(L-11)
	VG-75 A, 1-4	(J-13, J-14)

Comments:

LAR

The licensee stated that the subject valves will be designated as "active." Each of these valves are "rapid acting" solenoid valves. The valves will be stroked and timed and included in a relief request for relief from stroke time trending based upon rapid operation of 2 seconds or less.

- 5. Relief Valves

NG-34-A, B (A-2, G-2)

Q. Provide detailed technical justification for not testing these valves per requirements of IWV-3510.

Comments:

R

The licensee stated that the subject valves do not have to operate or function to bring the reactor to cold shutdown conditions or in mitigating the consequences of an accident.

V-29 TIP

- 1. Ball Valves A-C and RRB V44

Q. The program "Test Requirements" should show "leak test".

RRB-V44 should show that the valves meet IWV-3426, analysis of Leakage Rates and IWV-3427, Corrective Action.

Quarterly testing of these valves was not stipulated as the test frequency.

Comments:

LAR

The licensee stated that leak test in accordance with Appendix J will

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

- 4. Q. Technical Specification Table 4.7.2.b require the following valves to be operable, however, the program does not operability test (exercise or stroke time) the valves. Provide detailed technical justification for not including this testing in the program.

Valves:	VG-24	(L-11)
	VG-25	(L-11)
	VG-33	(L-11)
	VG-34	(L-11)
	VG-75 A, 1-4	(J-13, J-14)

Comments:

LAR

The licensee stated that the subject valves will be designated as "active." Each of these valves are "rapid acting" solenoid valves. The valves will be stroked and timed and included in a relief request for relief from stroke time trending based upon rapid operation of 2 seconds or less.

- 5. Relief Valves

NG-34-A, B (A-2, G-2)

Q. Provide detailed technical justification for not testing these valves per requirements of IWV-3510.

Comments:

R

The licensee stated that the subject valves do not have to operate or function to bring the reactor to cold shutdown conditions or in mitigating the consequences of an accident.

V-29 TIP

- 1. Ball Valves A-C and RRB V44

Q. The program "Test Requirements" should show "leak test".

RRB-V44 should show that the valves meet IWV-3426, analysis of Leakage Rates and IWV-3427, Corrective Action.

Quarterly testing of these valves was not stipulated as the test frequency.

Comments:

LAR

The licensee stated that leak test in accordance with Appendix J will be added to the program under alternate testing. The TIP system solenoid valve will be removed from the program since it no longer receives a primary containment isolation signal. The solenoid valve no longer performs a safety function.

The licensee will refer to a generic relief request for meeting IWV-3426 and IWV-3427.

2. Shear Valves A-C

Q. The program legend stipulates testing 20% of the explosive charges every 2 years. This cumulatively test all 4 valves within eight years. Does the manufacturer's guaranteed operating life for the explosive charges exceed the eight years?

Comments:

R

The licensee stated that they have a total of 3 TIP shear valves at Vermont Yankee. The explosive charges in all 3 valves are replaced at a maximum interval of 2 years. The required service life of the replacement charges is verified prior to their installation.

3. Relief Request RRB-V45

Q. The relief request will be acceptable if a maximum stroke time of 2 seconds is assigned. (Reference comment under item 1. of V-27 & 28.)

Comments:

LAR

The subject relief request will be removed from the program per recent design changes to delete the valves containment isolation signal. The subject solenoid valve no longer performs a safety function.

Relief Request Basis

1. RRB GV-2

Q. This relief request needs better definition.

Comments:

LAR

The licensee stated that the relief request would be revised to provide better clarification.

2. RRE GV-4

Q. As previously discussed under V-27 & 28, the NRC staff has identified rapid-acting power operated valves as those which stroke in 2 seconds or less. Relief from trending requirements of IWV-3417(a) will be given for these valves, however, the staff does require that the licensee assign a maximum limiting stroke time of 2 seconds to these valves in order to obtain this Code relief.

Comments:

LAR

The licensee stated that the subject relief request will be revised accordingly.

Miscellaneous Items/Comments

1. Q. Provide pump and valve program listing for spent fuel pool cooling.

Comments:

R

The licensee stated that Vermont Yankee has no accident analysis that requires pumps and valves to operate for fuel pool cooling.

2. C. Provide the maximum value of limiting stroke time for all power operated valves in the IST program.

Comments:

R

The licensee provided a table listing the quantitative values based upon the plants safety analysis.

3. Q. Provide the documentation that ensures that IWV-3300 is being met. (Remote position indication verification).

Comments:

R

The licensee provided for staff review a copy of the pertinent pages from procedure 4102.03, Revision 14, that provides for Local/Remote Valve Position Indication Tests.

4. Q. Provide latest revisions of drawings for post accident hydrogen control and the updated IST program listing for the pumps and valves for post accident hydrogen control.

Comments:

R

The licensee stated that at Vermont Yankee post accident hydrogen control is provided by the Containment Atmosphere Dilution (CAD) System. CAD is included in the IST program on pages V-27 and V-28.

5. Q. Provide a listing of all valves that perform a pressure isolation boundary between the high pressure reactor coolant system and connected lower pressure piping systems.

Comments:

R

The licensee provided a listing of the subject pressure isolation valves for staff review.

6. Q. During the meeting the staff asked the licensee to provide drawings and information for staff review regarding pumps and valves that would be required to maintain control room habitability in the event of an accident.

Comments:

R

The licensee supplied drawings subsequent to the meeting and stated that there were no pumps or valves within the control room HVAC system which are required to operate to maintain control room habitability.

May 9, 1988

Docket No.: 50-271

LICENSEE: Vermont Yankee Nuclear Power Corporation (VYNPC)

FACILITY: Vermont Yankee Nuclear Power Station

SUBJECT: MEETING SUMMARY

On October 14 and 15, 1987, the NRC staff met at the NRC Region I office in King of Prussia with representatives of VYNPC to discuss remaining informational needs associated with the staff's review of VYNPC's Inservice Testing (IST) program for pumps and valves. On October 28 and December 22, 1987 the staff also discussed by telephone with VYNPC representatives follow on items resulting from the meeting. Meeting minutes which include an attendance roster are enclosed.

The licensee has agreed in telephone discussion with the Project Manager to revise the IST program, based on these meeting minutes, and resubmit the revised program as soon as possible but no later than August 1, 1988.

Sincerely,
Original signed by:

Vernon L. Rooney, Senior Project Manager
Project Directorate I-3
Division of Reactor Projects I/II

Enclosures:
As stated

cc: See next page

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Meeting Minutes From The
NRC Staff's Inservice Test Program Review Meeting
With Representatives of the Vermont
Yankee Nuclear Power Corporation
Conducted October 14 and 15, 1987

A working meeting was held at the NRC Region I office in King of Prussia, Pennsylvania with representatives of the Vermont Yankee Nuclear Power Corporation on October 14 and 15, 1987. The purpose of the meeting was to discuss the staff's Request for Additional Information (RAI) questions resulting from the staff's review of the Vermont Yankee's pump and valve inservice testing (IST) program. The staff's RAI questions were sent to the licensee by letter V. L. Rooney to R. W. Capstick on January 5, 1987. The staff's questions served as the meeting agenda. Each of the staff's RAI questions were discussed during the meeting.

The staff's RAI questions are indicated by the letter Q. before the question. The meeting minutes are given under "Comments". Pertinent licensee and staff comments, explanations, understandings and clarifications are discussed in the minutes. For the majority of the RAI questions the discussions provided the staff with the needed clarifications and information to allow the staff to complete the review expeditiously pending receipt of a revised program submittal from the licensee. Where the licensee agreed to take specific action, for example, to revise or make changes to their IST program, an LAR (Licensee Action Required) follows the meeting minutes "Comments". Where the staff's RAI question was resolved during the meeting discussion an R (Resolved) follows the meeting minute "Comments". Several items that will require additional work to obtain resolution by either the licensee or staff are listed as OI-L (Open Item - Licensee) or OI-S (Open Item - Staff). These open items were discussed in a conference call between the licensee and staff on October 28, 1987 and again on December 22, 1987. Both the staff and the licensee agreed to work for timely resolution of the remaining Open Items. The open items are tabulated in the table that follows.

The purpose of these minutes are to document the results of the above discussions.

The participants were:

D. L. Capton, NRC, Region I
V. L. Rooney, NRC, NRR Headquarters
P. K. Eapen, NRC, Region I
L. J. Prividy, NRC, Region I
J. P. Durr, NRC, Region I
J. Pelletier, Vermont Yankee
D. Reid, Vermont Yankee
G. Cappuccio, Vermont Yankee
K. H. Bronson, Vermont Yankee
T. C. Trask, Vermont Yankee

At the conclusion of the meeting the staff requested that the Vermont Yankee IST program be revised to incorporate the needed program revisions within 60 days from receipt of the meeting minutes. The staff stated that the revised licensee's IST program submittal will be used to base the staff's final review and safety evaluation of the licensee's IST program.

OPEN ITEMS

Valves

<u>VY IST Program</u> <u>Page Number</u>	<u>Question Number</u>	<u>Responsible</u>
V-7	Q.8	OI-L
V-11	Q.2	OI-S and OI-L
V-12 - 14	Q.8	OI-L
V-16	Q.2	OI-L
V-17 & 18	Q.1.b.	OI-L
V-17 & 18	Q.3	OI-S and OI-L
V-17 & 18	Q.9	OI-S and OI-L
V-19 - 21	Q.7	OI-L

NOTE: There were no Open Items for pumps.

PUMPS

1. Service Water Pumps P7-1A-D G191159 Sh 1

Q. The WP appears to be measurable, however, the program's pump testing does not indicate this. The listing should be revised.

Comments:

LAR

The licensee stated that the river water level provides the inlet pressure for these deep well centrifugal pumps. The licensee uses the inlet head and discharge pressure to arrive at the functional equivalent of WP. The licensee will provide an appropriate discussion in his revised program regarding WP and flow measurement.

2. High Pressure Coolant Injection Pumps G191169 Sh 2
HPCI Gland Seal Exhauster
HPCI Hot Well Condensate Pump

0. Discuss the safety related functions (shutting down the reactor or in mitigating the consequences of an accident) of these pumps. Provide a detailed technical justification for not including the pumps in the program.

Comments:

R

The licensee stated that the gland seal exhaustor and hot well condensate pump are non-safety related and do not have a reactor shutdown or accident mitigation function, therefore, were not included in the program. The licensee stated that proper operation of these pumps are demonstrated by HPCI system operation.

3. Standby Liquid Control Pumps

Q. Is lubricant temperature measured in the pump crankcase or another location?

Comments:

LAR

No. The licensee stated that a generic relief request to delete bearing temperature measurement will be placed in the IST program.

4. Core Spray Pumps P4E-1A/B

Q. During outage testing, is the length of time of the pump run adequate to reasonably assure that no problems are being experienced as a result of bearing heating? Note-this comment is applicable to the other pumps in the program that similarly have bearing temperatures that cannot be directly measured.

Comments:

R

The licensee is requesting generic relief from measurement of Pump Bearing Temperatures. The licensee stated:

"This Relief Request Basis is consistent with the requirements of ANSI/ASME Standard OM-6. "In-Service Testing of Pumps", Draft 11, which does not require bearing temperature measurements.

ALTERNATIVE TESTING:

Pump mechanical condition can be determined much more accurately by measuring bearing vibration. Paragraph IWP-4500 requires at least one displacement vibration level be read during each in-service test. The number of readings will be expanded to a minimum of two in orthogonal directions. These additional readings, in addition to the revised vibration measurement methods and acceptance criteria given in Relief Request Basis GP-3, will provide a viable means of monitoring pump mechanical condition."

5. RCIC Condensate and Vacuum Pumps G191174 Sh. 2

Q. Discuss the safety related functions of these pumps. Provide a detailed technical justification for not including these pumps in your program.

Comments: R

The licensee stated that "these pumps are non-safety related and provide no reactor shutdown or accident mitigation function. Therefore, they are not included in the program."

6. RBCCW Pumps G191159 Sh. 3

Q. The program listing for the reference drawing shows sheet 1, the pumps are on sheet 3.

Comments: R

The licensee will correct the reference.

7. Emergency Diesel Generator Auxiliaries G191162

a. Q. The diesel engine's fuel pump and clean oil return pumps are missing from the program.

Comments: R

The licensee stated that the pumps are not required for the safety related operation of the diesel. The staff agreed.

b. Q. In relief Request Basis P-12, Fuel Oil Transfer Pump Bearing Temperature measurement per IWP-3300, regarding alternate testing, is it possible to check bearing temperatures by pumping to the 5000 gallon Fuel Oil Day Tank 41-1A for the heating boilers?

Comments: LAR

The licensee will delete this relief request and provide a generic relief request as discussed under 4, above.

8. Pump RRU-18 and G191175 Sh. 1
Two check valves 16-19-101 (E-15)
and 16-19-103

Q. What are the safety related functions of the pump and two check valves?

Comments:

R

The licensee stated that:

"Pump RRU-18 and check valves V16-19-101 and V16-19-103 are components of the Torus to Drywell Pumpback System. This system is no longer in use and has been retired in place.

The Torus to Drywell Pumpback System was originally installed to maintain the 1.7 psid between the torus and the drywell. This differential pressure along with proper torus water level assure the integrity of the torus when subjected to post-LOCA suppression pool hydrodynamic forces.

The drywell-torus differential pressure is now maintained by use of the Nitrogen Inerting Supply System.

Valves V16-19-102, 103, 105, 106 and 109 are normally closed, the breaker for RRU-18 is open and the discharge piping downstream of valve V16-19-101 has been cut and capped."

9. Q. What is the technical justification for not including the Torus to Drywell pumpback system in the IST program? (No drawings provided).

Comments:

R

The licensee included his response to this question with question 8. above.

10. Q. Describe any functions that the Drywell Floor Drain pumps P-11 A/B and the Drywell Equipment Drain pumps P-15-A/B have in shutting down the reactor or mitigating the consequences of an accident.

Comments:

R

The licensee stated that these pumps are isolated during accident conditions and serve no safety function or accident mitigation function.

Valves

V-4* Service Water System

Dwg. G191159 Sh. 1&2

1. Valve V 70-1A-D and Relief Request Basis RRB-V1 (B, H-3)
- a. Q. The relief request lacks specificity regarding frequency of exercise testing. The time period should be specified. Reference IWV-3521. (Note: 24 months is normally the maximum relief that the staff will consider.)

* The V-4 number is the page number in the licensee's IST program.

General Note applicable to all relief requests: Relief requests should clearly specify what specific relief is being requested including the detailed technical basis for the specific relief being requested. Revise relief requests accordingly.

Comments:

LAR

The licensee stated that at least two tests will be conducted annually on each of the check valves with at least three months between tests. The relief request will be revised to include the basis for this testing frequency.

- b. Q. Is there a leakage requirement established for these valves in the closed position? Is prompt closure verified?

Comments:

LAR

The licensee stated that no specific valve leakage requirement is necessary to meet system performance criteria.

The minimum system performance requirement for each pump is 2700 gpm against a TDH of 250 feet (TS 4.5.D.1) This will be incorporated into the IST program.

Prompt closure of each check valve will be verified by visual observation of system pressure indicators and by observing that the non-operating pump is not wind milling.

2. Relief valves in Service Water System

Q. Provide detailed justification for not including the service water system's relief valves in the IST program and testing in accordance with IWV-3510.

Comments:

R

The licensee stated that the subject relief valves serve as thermal reliefs and as such these valves do not perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

3. RHR Motor Cooling

Q. What is the technical bases for not including: check valves 181 XC (4 total, one for each motor) and Solenoid valves SE-70-4C (4 Total)?

Comments:

LAR

The licensee stated that the above valves will be put into the program for testing as follows:

Check valves 181 XC will be designated Category C.

Solenoid valves SE-70-4C will be designated Category B.

The licensee will submit a relief request on timing for the solenoid valves.

4. Valves V 70-84A and 84 B Reference G191159 Sh. 2) (B and H-3).

Q. What is the safety related function of these valves?

Comments:

R

The licensee stated that these valves have no safety related function. These valves provide an alternate cooling path to the station air compressors.

5. Emergency Diesel Generator Cooling

- a. Check Valve 70-1 (B-9)

Q. This check valve is not in the program, however, the position of the valve appears to be of safety related importance to assure a heat sink for the emergency diesels and as such should be tested as a Category C valve.

Comments:

R

The licensee stated that the valve is a manually operated butterfly valve and is not required to be operated to assure a heat sink for the EDGs.

- b. Fill Valves On Expansion Tanks

SE-70-2A? (Drawing has no numbers) (F-8)
SE-70-2B (C-5)

Q. These valves are not in the program, however, appear to have safety importance to assure cooling of the EDGs. The valves should be included in the program and tested.

Comments:

R

The licensee stated that these valves do not perform a safety function therefore are not included in the program. The tanks are equipped for manual makeup and have a level alarm to alert operators if a level problem occurs.

6. Q. Line 24" SW 1B (Dwg. G191159, Sh. 1) appears to connect to 8" SW 1PB (Dwg. G151159, Sh. 2) at match line A, however, there is no reducer shown. Is there a missing drawing? Also there is no 24" SW 1B in the "Piping Line List".

Also the 18" SW 12 line goes to 20" SW-12? Same question?

Comment:

LAR

The licensee stated that the subject service water drawings are flow diagrams and were not intended to show the detail piping configurations. The first entry in the Dwg G191159, sheets 1 and 2 is being corrected to show SW-1A-D vice SW-1A&D, otherwise the drawings fulfill their intended purpose.

V-5 Reactor Building Closed Cooling Water

1. Relief Valves G191159 Sh.3(A-4)
RBCCW HX's
SR 70-1A/B

Q. Provide detailed technical justification for excluding these two relief valves from the program.

Comments:

R

The licensee stated that these valves are thermal relief valves and therefore are not required for safe shutdown or accident mitigation.

2. Air Operated Valve (D-8)
LCV-1

Q. Does this valve operate to make up system losses of inventory? Does the valve fail open upon loss of air?

Comments:

R

The licensee stated that the valve does operate to make up system losses of inventory as an operations aid. It fails closed upon loss of air. The valve is not required to shutdown the reactor or to mitigate the consequences of an accident. The tank is equipped with a low level alarm which annunciates in the control room thus allowing for manual makeup if needed.

V-7 Service and Instrument Air, Diesel Generator Starting Air System,
Dwg. G-191160 Ref. Sh. 7

1. Pressure Relief Valves (unnumbered) on EDG Air Receiver Tanks, one on each tank, four total. (Ref. Sheet 7 of 7)

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3510.

Comments:

R

The licensee stated that these relief valves are not required to operate in shutting the reactor down or in mitigating the consequences of an accident.

2. Check valve unnumbered in line from air receiver to motor pressure switch, one for each air receiver. (Ref. Sheet 7 of 7).

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3510.

Comments:

R

The licensee stated that these instrument line valves do not perform a function in shutting down the reactor or in mitigating the consequences of an accident.

3. Pressure Relief Valves (unnumbered) on air compressors, two total.

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3510.

Comments:

R

The licensee stated these valves do not perform a function in shutting down the reactor or in mitigating the consequences of an accident.

4. EDG Air Start Solenoid Valves (Colt Industries Dwg. 1185383)

Q. Provide your detailed technical justification for not including these valves in the IST program and testing per IWV-3400.

Comments:

LAR

The licensee stated that these valves will be added to the program as Category B valves and full stroke exercised quarterly during diesel generator surveillance testing. A new relief request will be generated since the valves are fast acting valves and difficulty exist in the measuring and trending of stroke times.

5. Valve V72-78 A-D and V72-80 A-D Dwg. G191160 Sh. 7

Q. Do these valves have to meet a leakage criteria to protect against the loss of receiver redundancy?

Comments:

R

The licensee has not required these check valves to meet a leakage criteria. The proper closure of the check valves is determined by their capability to maintain normal receiver pressure without excessive running of the compressor.

6. Relief Request Bases V5

Q. Revise to show compliance with requirement of IWV-3423 regarding adjusting to functional maximum pressure differential value.

Comments:

LAR

The valves are currently tested at accident pressure of 44.0 psig. The licensee stated that a generic relief request bases will be provided in the program to satisfy compliance with IWV 3426 and IWV-3427.

7. Instrument Air System Ref. G191160 Sh. 4

Q. What is the safety function of check valves:

Check valve next to V 72-154 and unnumbered (L-6)

V 72-51A
V 72-155 (Check valve is next to and unnumbered)
V 72-86A
V 72-86B
V 72-51B
V 72-49A
V 72-49B
V 72-67A
V 72-67B

Comments:

LAR

The licensee stated that the unnumbered valves are V72-154C and V72-155C. The drawing is being corrected to incorporate the numbers. The licensee stated that none of the listed valves perform safety functions required to shutdown the reactor or mitigate the consequences of an accident.

8. Relief Request Basis V6 Dwg. G191160 Dh. 3 (K-12 and 15)
for Valves V72-89 B/C

Q. Relief request as written does not show compliance with exercise testing frequency under IWV-3522. Revise to meet Section XI.

Note: The leak test requirement Ref. RRB-V5 needs to be revised to comply with IWV-3426 and IWV-3427, Analysis of Leakage Rates and Corrective Action, respectively.

Comments:

LAR and OI-L

The licensee stated that the subject valve closure will be verified during Appendix J testing on a refueling frequency.

Regarding Paragraph IWV-3426, Analysis of Leakage Rates:

The licensee stated that leakage rates for valves being tested under Appendix J are covered by Appendix J and the Technical Specification.

Regarding IWV-3427, Corrective Action:

The licensee stated that a new relief request will be included in the program to cover Vermont Yankee's position for compliance with IWV-3427 (and IWV 3426).

The staff stated that the licensee's program must be equivalent to or more conservative than IWV-3427 in order to be acceptable to the staff.

Note: The code IWV-3427, Corrective Action, requires for poor performers (leaking valves) that testing be at increased frequency, i.e., cold shutdown. The code stipulates repair or replace valves that will exceed the maximum permissible leakage rate by greater than 10% on a cold shutdown frequency. Vermont Yankee's response focus is refueling frequency as opposed to the Code. Open item for the licensee.

9. Check Valve V72-103 Dwg. G191160 Sh. 3

Q. What is the basis for specifying the valve to be passive? The valve is categorized as AC, however, the exercise requirements are not specified.

Comments:

R

The licensee stated that the subject instrument air system check valve is considered passive as it is not required to change position to accomplish its safety function of containment isolation. A normally blanked off spectacle flange and other normally closed valves isolate the instrument nitrogen subsystem from the instrument air system.

10. Check valves

0. What is the safety related function of these valves?

V-72-70 A/B	G191160	Sh. 3 (L-17)
V-72-26 A/B	G191160	Sh. 3 (L-12)
V-72-26 G/H	G191160	Sh. 3 (L-11)
V-72-68 A/B	G191160	Sh. 3 (J-11)
V-72-37 A/B	G191160	Sh. 6 (L-7)

Comments:

R

The licensee stated that none of the subject valves perform a safety function to shutdown the reactor or maintain the reactor in a safe shutdown condition or to mitigate the consequences of an accident.

V-8 Emergency Diesel Generator Fuel Oil System Dwg. G191162

1. Q. Is valve LCV-3 (D-5) required to operate at anytime the EDCs are responding to an accident condition?

Comments:

R

The licensee stated that the subject valve is normally closed and fails, closed upon a loss of instrument air. Past surveillance testing has shown EDG operability not to be affected regardless of the valves position. The valve is not required to operate during accident conditions.

2. Relief Valves 3A and 3B (C-4)

Q. Provide detailed technical justification for not including these valves in the program and testing per IWV-3510.

Comments:

R

The licensee stated that these valves do not perform a safety function to shutdown the reactor or mitigate the consequences of an accident.

3. Q. Two relief valves and four check valves are shown on the drawing at the EDG. Provide your detail technical justification for not listing the valves in the program.

Comments:

R

The licensee stated that for these valves proper operation is verified during the current surveillance testing of the engines.

4. Clean Oil Tank

(D-10)

- a. Q. How is the tank vented?
- b. Q. Are there any check valves installed in the pump discharge piping?

Comments:

R

The licensee provided a sketch of the clean oil tank and piping. The tank is vented to atmosphere from a standpipe placed at the top of the tanks.

There are no check valves. The tank collects clear oil leakage from around the diesel. The licensee stated that failure of the clean oil pump would not preclude the diesel from performing its safety related function.

5. EDG Lube Oil System

- Q. What are the drawing numbers that show this system? (No drawings were provided.)

Comments:

R

The EDG lube oil system is shown on drawing 5920-4150.

V-9&10 Nuclear Boiler

G191167

1. Relief Valves SR2-14E-L and RRB V7

(L-11)

- Q. Under "Alternate Testing", RRB V7 should also specify exercise testing during refueling outages.

Comments:

LAK

The licensee stated that program definition will be provided to show that the cold shutdown definition will include refueling outages.

2. Relief Valves SR2-14 A-D

(L-11)

- Q. Provide your technical justification for not testing these relief valves.

Comments:

R

The licensee stated that Safety Relief Valve Discharge Line (SRVDL) vacuum breakers SR-14 A-D do not perform a safety function and need not be included in the IST Program.

In 1980, Vermont Yankee performed modifications to the torus and associated LOCA load mitigation equipment as a result of the Mark I Containment Long Term Program.

Analyses on the safety relief valve discharge lines indicated that the 2-inch vacuum breakers (SR2-14 A-D) did not have enough throat area to equalize SRVDL-Drywell pressure without the occurrence of a very high water leg in the line. This water leg, in turn, would produce intolerable thrust and dynamic pressure loads on the piping. To reduce these loads, two redundant 10-inch vacuum breakers were installed in each line to replace SR2-14 A-D.

Vacuum breakers SR2-14 A-D were retired in place and need not function to aid in shutting down the reactor or in mitigating the consequences of an accident. The eight new vacuum breakers, SR2-14 E-L, are included in the IST program.

- | | | | |
|----|---------------|---------------------|-------|
| 3. | Valves V2-37A | (check) | (E-7) |
| | S1A | (solenoid operated) | (C-8) |

Q. Provide your detailed technical justification for not including these valves (one set for each relief valve).

Comments:

LAR

The licensee stated that these valves will be added to the program and will be tested on a refueling frequency, a relief request will be provided to support the refueling frequency surveillance testing.

4. RRB V 11 For Safety and Relief Valves

Q. The VY testing frequency of testing all valves every two refueling outages is more conservative than the Code frequency of testing all valves every five years. However, the relief request does not adequately address the IWV-3513 additional test aspects regarding corrective action to be taken in the event a failed valve is identified. The relief request states that additional testing is unreasonable per IWV 3513, however, provides no bases for handling the failure issue. Provide your technical bases for handling the valve failure issue and specify alternate requirements.

Comments:

LAR

The licensee stated that failure of the Main Steam Safety of Relief Valve to function within the required parameters on test would result in the analysis and reporting of such failures in accordance with the Licensee Event Report system, 10 CFR 50.73. Per 10 CFR 50.73(b), each LER shall contain an assessment of the root cause, safety consequences and implications of the event and a description of any corrective actions planned as a result of the event, including the need for additional testing and steps to be taken to reduce the probability of similar events occurring in the future.

The licensee will revise the relief request bases to address the part of the code that is practical and not practical to be met.

5. Feedwater Valves V2-27A (F-3)
V2-96A (H-3)
and RRB V8

Q. These valves should complete with the analysis of Leakage Rates and Corrective Action Requirements, Paragraphs (IWV-3426 and IWV-3427, respectively. The relief request should be revised accordingly.

Comments:

LAR

The licensee responded to this item subsequent to the meeting in a telephone discussion between the staff and Don Reid and others on October 28, 1987.

The subject two outboard feedwater check valves will be local leak tested under Appendix J on a refueling frequency. The valves will be full stroke exercise tested to the open and closed positions on a refueling frequency. An appropriate relief request will be provided. A generic relief request will be provided to cover Vermont Yankee's position for compliance with IWV-3426 and IWV-3427.

The staff stated that the licensees program would need to be equivalent to or more stringent than IWV-3426 and IWV-3427 in order to be acceptable to the staff.

6. Feedwater check valves V2-28 A/B (F-4)(H-4)
and RRB V9

Q. Note: Valves have a safety related function to close as an isolation valve and a safety function to open upon HPCI & RCIC injections. No relief from quarterly exercise testing was included. Do you intend to exercise quarterly?

The valves should comply with the analysis of Leakage Rates and Corrective Action Requirements, Paragraphs IWV-3426 and IWV-3427, respectively. The relief request should be revised accordingly.

Comments:

LAR

The licensee provided an additional response to this item subsequent to the meeting in a telephone discussion between the staff and Don Reid and others on October 28, 1987.

The licensee stated that the subject two inboard feedwater check valves had received an exemption from leak rate testing under Appendix J. (Reference SER by letter D. G. Eisenhut, NRR, to J. B. Sinclair, VYPC dated August 19, 1983). The licensee stated that the motor operated feedwater heater valves would be closed as backup in the event containment isolation is required. Closure of the motor operated heater valves is also required under Appendix J whenever containment isolation is required (reference the August 19, 1983, SER).

The licensee stated that the subject valves will be exercised to the full open position at startup and an ALARA bases for not full closure exercising would be provided. The licensee also stated that the valves have a hard seat and require a high pressure to seal them closed. The piping configuration further makes it impractical to conduct a pressure test to verify closure.

7. Process Sampling Valves

V2-39	(L-4)
V2-40	(L-3)
RRB-V8	

Q. These valves should comply with the analysis of Leakage Rates and Corrective Action Requirements, Paragraphs IWV-3426 and IWV 3427, respectively. The relief request should be revised accordingly.

Comments:

LAR

The licensee stated that these Code requirements would be covered by a generic relief request.

8. Steam Drain Valves:

V2-74	(D-10)
V2-77	(D-13)

- a. Q. Provide your detailed technical justification for not exercising and stroke time testing these Category A valves.
- b. Q. The valves must comply with the Analysis of Leakage Rates and Corrective Action Requirement, Paragraphs IWV-3426 and 3427, respectively.
- c. Q. The relief request RRB-V8 needs revising accordingly.

Comments:

LAR

The licensee stated:

- a. The valves are presently exercised and stroke timed. The program valve listing will be revised to reflect this testing.
- b. These code paragraphs will be covered by a generic relief request.
- c. The relief request RRE-V8 will be deleted.

9. MSIVs

V2-80 A-D	(D, F, G, H-10)
V2-86 A-D	(D, F, G, H-13)

- a. Q. The valves must comply with the Analysis of Leakage Rates and Corrective Action Requirements, Paragraphs IWV-3426 and 3427, respectively. Revise the relief request RRV-V8 accordingly.

Comments:

R

The licensee stated that a generic relief request will be provided to cover Vermont Yankee's position regarding compliance with IWV-3426 and IWV-3427.

10. Excess Flow Check Valves

G191167

SL-23	(C-3)
SL-301F	(D-3)
SL-301B	(D-3)
SL-301A	(D-3)
SL-301E	(D-3)
SL-97B	(M-12)

- Q. Describe the safety related function of each of these check valves.

Comments:

R

The licensee stated:

- SL-23 This valve is not required for reactor shutdown or accident mitigation.
- SL301 A, B, E, F and SL-97B These valves were previously used on reactor coolant pressure indicating lines and the indications and connections to the reactor coolant system has been deleted by a design change. They are not required to be operable and now perform no safety function. Valve SL-97B has a closed manual isolation valve (RV-98B) upstream of it and is therefore also not required.

11. MSIV Supply Check Valves

IA 87 A-D

(B-12)

CA 87 A-D

(B-10)

Q. Provide detailed technical justification for not including these valves in the program.

These valves appear to assure that the MSIV accumulators remain at pressure in the event of a loss of header pressure. They appear to be Category C valves.

Comments:

LAR

The licensee stated that these check valves are not needed to function for the MSIVs to perform their safety function since the MSIVs are spring loaded "fail safe" to close. Based upon this, the valves are not required to be in the IST program.

The licensee also stated that the main Steam relief valve air supply accumulator check valves, V2-37A-D, do perform a safety function, are presently tested and will be added to the IST program. The licensee will request relief from IWV-3426, analysis of Leakage Rates, for these valves based upon a previous staff safety evaluation letter, Vassallo, NRC, to Capstick, VYNPC, dated March 4, 1985. The licensee intends to meet IWV-3421 to demonstrate seat leak tightness.

V-11 Core Spray System

Reference Drawing G191168

1. SR 20 A and B

Safety Relief Valves

Q. Provide a detailed technical basis for not including these valves in the program and testing per IWV 3510?

Comments:

R

The licensee stated that the subject relief valves are not required to perform a specific function in shutting down the reactor to the cold shutdown condition or in mitigating the consequences of an accident.

2. MOV 12 A and 12 B

(Outside containment)

Check Valves V13A and V13B

(Inside containment)

Q. These valves provide the redundant barrier between high and low pressure piping. Provide detailed technical justification for not designating as Category A and leak testing.

Comments:

OI-S and LAR

The licensee stated that the subject valves will be designated Category A for the motor operated valves and Category AC for the checks valves.

The licensee does not individually leak test these valves. The 12A and 12B valves have continuous pressure monitoring downstream which is an acceptable method to the staff for determining their leak tight condition. However, the leak tight condition of the check valves 13A and 13B is not assessed via leak testing. These check valves provide redundancy for protection of the low pressure piping.

The NRC Committee to Review Generic Requirements (CRGR) currently has under generic review requirements for pressure isolation valves that comprise the barrier between high pressure and low pressure piping. Pending the findings from the CRGR regarding this matter a staff position regarding leak rate testing of check valves 13A and 13B can be made.

This is an open item for the staff and licensee.

3. MOV - V 7A and 7B (CS Pump Suction)

Q. What function(s) do the valves serve to mitigate the consequences of an accident. (The valves are not in the IST program).

Comments:

R

The licensee stated that these valves do not perform a safety function. The valves receive no automatic initiation signals and are open during post accident conditions for operation of the system.

4. Excess flow check valve SL-25

Q. Why is this valve not tested similarly to SL 31 A&B? (The valve is not on relief request RRB-V16).

Comments:

R

The licensee stated that the valve is included in the program as valve 2-3-25 under V-26 Nuclear Boiler Vessel Instrumentation. The valve is covered by RRB-40.

5. Check Valves 33A and 33B (CS pressurizing lines)

Q. Do these valves close to mitigate an accident? Discuss their function.

Comments:

LAR

The licensee stated that these check valves must close to assure that core spray flow does not bypass the core. The valve must open to permit flow into the core spray piping. The licensee will add the valves to the IST program to verify their proper operation. A relief request will be incorporated into the IST program to cover what testing is/is not practical for these check valves.

V-12-14 High Pressure Coolant Injection System (HPCI) G191169, Sh. 1

1. Steam Valves and RRB-V17:

V23-15

(E-5)

V23-16

(E-7)

Q. The valve must comply with the Analysis of Leakage Rates and corrective Action Requirements paragraphs IWV-3426 and 3427, respectively. Revise the relief request RRB-V17 accordingly.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

2. Excess Flow Check Valves:

SL 23-37 A-D or A-L

(F, G-5)

Q. Which is correct? The "Valve No." listing appears to have a typo. The drawing reflects A-D.

Comments:

R

The licensee stated that SL 23-37 A-D is correct and the listing has been corrected.

3. Check Valves and RRB-V20:

(N-7)

V 23-61

Q. The relief request basis wording is unclear regarding assuring that the valve's exercise test assures the exercising of the valves to the full open position.

Comments:

LAR

The licensee stated that the relief request RRB-V20 will be revised to specify full stroke exercising.

4. Check Valves (K-5)
V 23-12 and V 23-65

Q. These valves need to open to drain condensate and the exhaust steam drain pot. Provide a technical justification as to why the valves aren't exercise tested?

These valves also appear to perform a containment isolation function; if so, should be Category AC and comply with IWV-3426 and IWV-3427.

Comments:

LAR

The licensee stated that both valves are in the IST program and are exercised tested during the monthly technical specification required HPCI test at full flow.

The check valves will be designated AC. The licensee will leak test in accordance with Appendix J and will provide a generic relief request regarding compliance with IWV-3426 and IWV-3427.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

The licensee stated that valves SSC-23-13 and V23-36 will also be added to the IST program and be designated Category AC.

5. Check Valves (J-3)
V 23-842 and V 23-843

Q. These valves appear to be needed to open during HPCI operation, if so, they should be exercised tested. These valves also appear to perform a containment isolation function, if so, should be Category AC and comply with IWV-3426 and IWV-3427.

Comments:

LAR

The licensee stated that the subject valves will be added to the IST program and designated Category AC. The valves will be full stroke exercised during HPCI operation.

The licensee will incorporate a generic relief request relative to meeting IWV-3426 and IWV-3427.

6. Relief Valves G191169 Sh. 2
V 23-34 (D-9)
V 23-66 (J-12)

Q. Provide detailed technical justification for not having these valves in the IST program, and testing the valves as required by IVV 3510.

Comments: R

The licensee stated that the subject valves are not required to operate for safe shutdown or to mitigate the consequences of an accident.

7. Air Operated Valve (K-12)
V 23-54

Q. Provide detailed technical justification for not having the valve in the IST program and designating Category B.

Comments: R

The licensee stated that operation of V23-54 is not required and has no impact on HPCI operation. It is not required to operate for safe reactor shutdown or to mitigate and accident.

8. Check Valves (L-11)
V 23-130 and V 23-131

Q. Provide detailed technical justification for not having these valves in the IST program and designating as Category C valves.

Comments: OI-L

The licensee stated that additional review will be required to resolve the staff concern. Open item for the licensee.

9. Air Operated Valves G191169 Sh. 2
V 23-39 and 40 (M-11)

Q. What is the safety related function of these valves?

Comments: R

The licensee stated that these level control valves are not necessary for proper HPCI operation. The valves function during HPCI standby conditions therefore are non-safety related.

10. Drain Valves G191169 Sh. 1 (H-17 & J-1)

- V 23-53 (Air Operated) (H-17)
- V 23-42 (Air Operated) (J-16)
- V 23-43 (Air Operated) (J-16)
- V 23-149 (Check Valve) (I-16)

Q. Provide detailed technical justification for not having these valves in the IST program.

Comments:

R

The licensee stated that the subject valves are not required for HPCI operation. The valves serve to drain condensate from the HPCI turbine steam supply line, however, if a high level occurs in the steam supply line drain pot a high level alarm is annunciated in the control room.

V-15 Control Rod Drive Hydraulic System G191170

1. Valve V3-181 and RRB-V22 J-21

Q. The relief request needs to incorporate testing at refueling frequency in addition to cold shutdown.

The program's valve listing drawing coordinates should be J-21, not I-21.

Comments:

LAR

The licensee stated that definition will be made in the program to reflect testing during refueling in addition to cold shutdown.

The coordinates in the IST Program will be corrected to show J-21.

2. Valves V13-115 (B-16)

Q. The charging header check valves are active during reactor scrams to aid in control rod inserting and safe reactor shutdown. Provide detailed technical justification for not including these valves in the program.

Comments:

LAR

The licensee stated that the check valves will be put into the IST program as Category C and tested to assure that they will go to the full open position.

V-16 Standby Liquid Control System

Drawing No. G191171

1. Relief Valves SR-39A and 39E (G, K-7)

Q. These valves should be designated Category C and tested per IWY-3510.

Comments:

R

The licensee stated that these valves do not operate to shutdown the reactor or mitigate the consequences of an accident. The valves are required to be tested under the technical specification 4.4 A.2. to verify that their set point is between 1400 and 1490 psig.

2. Check Valves V 11-16 and 17 (G and H-2)

Q. Relief Request Basis V24 refers to TS Table 4.7.2.b applicable to containment isolation valves as opposed to component operational readiness testing under Section XI, IWV-3400. Provide detailed technical justification for not testing in accordance with Section XI.

Comments:

LAR and OI-L

The licensee stated that the valves are exempt from local leak rate testing under Appendix J. These check valves (Category AC) are located at the primary containment boundary, one located inside and one located outside. The SBLC explosive valves, located outside containment, seal the lines normally.

However, the staff's concern is that once the explosive valves are fired and the SBLC system has exhausted its supply or is shutdown for any reason, the subject valves would be needed to close and seal against an event where reactor pressure remains elevated. None of the remaining SBLC valves are leak tested under the IST program. There is low pressure piping upstream including tanks that are vented to the atmosphere. Leak testing of the subject two check valves is an open item for the licensee.

V-17 & 18 Residual Heat Removal System

G191172

1. Motor Operated Valves: V 10-17 and RRB V26 (G-8)
V 10-18 (F-8)

a. Q. The relief request needs to clearly state the detailed technical basis for the specific relief requested. The relief request basis states that the valves are presently exempted, per Tech. Spec. Section 4.7.2 from leak testing, however, a basis for this statement has not been found.

Comments:

LAR

The subject valves are reactor coolant system high to low pressure piping isolation valves. Valve V10-17 has pressure monitoring down stream which is acceptable to the staff for determining the leak tight integrity for this valve.

The licensee stated that valve V10-18 does not receive a leak test.

During the meeting the staff discussed using an existing 3/4 inch line, below valve V10-18 as a possible way to monitor leak tightness of the valve.

During a followup telephone discussion on December 22, 1987, the licensee committed to running a leak test on MOV V10-18 by monitoring leakage through the 3/4 inch line when the vessel hydro is conducted at a refueling frequency. This will provide resolution to this staff's concern.

- b. Q. These valves must comply with the Analysis of Leakage Rates and Corrective Action Requirements of the Code paragraphs IWV-3426 and IWV 3427.

Comments:

OI-L

The licensee needs to reevaluate their response to IWV-3426 and IWV-3427 for the subject valves. Open item for the licensee.

2. Valves: V 10-26A/B (C-7)(C-11)

Q. Same comment as 1.a. and b. above.

Comments:

LAR

The leak rate testing requirements of Appendix J apply. The staff notes that the subject drywell spray valves have been exempt from Appendix J type C leak rate test.

3. Valves V10-27A/B (D-6)(D-12)

Q. These valves are the first closed gate valves off of the reactor coolant loops to protect low pressure piping. Provide detailed technical justification for not designating as category A and leak testing. (Reference GDC-54)

Comments:

01-S and 01-L

This valve is the normally closed high pressure motor operated globe valve protecting low pressure piping downstream and as such should be designated Category A. There is one normally closed check valve between the reactor coolant system and the subject valves. The licensee does not leak rate test the subject valves nor has it been shown that pressure monitoring downstream is capable of ascertaining the valves leak tight condition.

The NRC Committee to Review Generic Requirements (CRGR) currently has under review requirements for pressure isolation valves that comprise the barrier between high pressure and low pressure piping. Pending the findings from the CRGR regarding this matter, a staff position on leak rate testing of the subject valves can be made.

Open item for the staff and licensee.

4. Valves V10-31A/B (C-B) (C-10)

Q. Same comment as 1.a. & b. above.

Comments:

LAR

The leak rate testing requirements of Appendix J apply. The staff notes that the subject dry well spray valves have been exempt from Appendix J type C leak rate test.

5. Valve V 10-32 (C-9)

Q. Same comment as 1.b. above.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

6. Valve V 10-33 (A-7)

Q. Same comment as 1.b. above.

Comments:

LAR

Same response at item 5. above.

7. Valves V10-34 A/B (E-4) (E-14)
Valves V10-38 A/B (E-4) (-13)

Q. These valves are the first normally closed valves coming from the suppression chamber (Reference GDC-54). Same comment as 1.a. and 1.b. above.

Comments: LAR

The leak rate testing requirements of Appendix J apply. The staff notes that the subject torus spray and level supply valves have been exempt from Appendix J type C leak rate test.

8. Valves V10-39 A/B (D-4) (D-14)

a. Q. Same comments as 1.a. and 1.b. above. (Note: this is the second valve from containment.)

Comments: LAR

The leak rate testing requirement of Appendix J apply.

b. Q. Provide detailed justification for not quarterly stroke testing these valves.

Comments: LAR

The licensee stated that the valves are quarterly stroke tested. The program will be corrected to reflect quarterly stroke testing.

9. Check Valves V10-46 A/B (E-7) (E-11)

Q. These valves are listed as Category C, however, they are the inside containment isolation valves and should be categorized as AC and leak tested to assure protection of low pressure piping.

Comments: OI-S and OI-L

The valve is a normally closed check valve serving as a pressure isolation valve protecting low pressure piping downstream. This is the first normally closed valve from the reactor coolant system.

The valve should be designated Category AC. The licensee does not leak rate test the subject valves neither is there continuous pressure monitoring downstream.

The NRC Committee to Review Generic Requirements (CRGR) currently has under review requirements for pressure isolation valves that comprise the barrier between high pressure and low pressure piping. Pending the findings from CRGR regarding this matter a staff position regarding leak rate testing of the subject valves can be made.

Open item for staff and the licensee.

10. Valves V10-89A/B (M-1) (L-17)

Q. Do the valves have a fail safe position and if so, are they exercised to this position?

Comments: R

The licensee stated that the valves have no fail safe position. They are remote manually operated.

11. Valves V10-16 A/B (I-5) (I-12)

Q. These valves are the first isolation valves outside containment and as such appear to be Category A as they serve an isolation function (Reference GDC-54). Provide detailed justification for not designating Category A.

Comments: R

The leak testing requirements of Appendix J apply. The staff notes that the subject valves have been exempt from Appendix J leak rate testing.

12. Check Valves V10-19 A-D (K-6 & 12)
(J-6 & 12)

a. Q. These valves are the second isolation valves outside of containment and as such it appears these valves should be Category AC and leak tested.

Comments: R

The leak testing requirements of Appendix J apply. The staff notes that the subject valves have been exempt from Appendix J leak rate testing.

b. Q. It is not clear (Reference Note 6) that the exercise testing verifies full opening of these valves.

Comments: LAR

The licensee stated that Note 6 will be revised to reflect proper opening of the valves.

13. Relief Valves

V10-SR-35 A/B	(D-2) (D-15)
V10-SR-40	(G-8)
V10-SR-72 A/B/C/D	(K-7) (K-11) (J-7) (J-11)
V10-SR-80 A/B	(K-3) (K-14)
V10-SR-86 A/B	(K-3) (K-14)
V10-RV-210 A/B	(D-12) (D-5)

Q. Provide detailed justification for not designating these valves Category C and testing per IWV-3510?

Comments:

R

The licensee stated that the subject valves are not required to operate for safe reactor shutdown are to mitigate the consequences of an accident. The valves serve a thermal relief function.

14. Motor operated Valve V10-20

(H-4)

Q. This valve has a safety function as described in FSAR 4.8.5 "to supply either loop from the pumps in the other loop". Its operational readiness should be verified and, therefore, included in the program.

Comments:

LAR

This licensee stated that the subject valve does not perform a safety function. The motor leads have been disconnected. The licensee stated that the FSAR will be updated.

15. Valves

V10-15A/B/C/D	(K-7) (K-10) (J-7) (J-10)
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Q. Are these valves used to bring the reactor to a cold shutdown condition or in mitigating the consequences of an accident? If so they should be included in the program.

Comments:

LAR

The licensee stated that the shutdown cooling suction valves are required to open to provide shutdown cooling. The valves will be included in the IST program as Category B valves.

16. Valves

V-10-13A/B/C/D	(K-8) (K-9) (J-9) (J-8)
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Q. Are these valves used to bring the reactor to a cold shutdown condition or in mitigating the consequences of an accident? If so they should be included in the program.

Comments:

LAR

The licensee stated that these valves are required to close when the RHR system is aligned for shutdown cooling and will be included in the IST program and designated as Category B valves.

V19-21 Reactor Core Isolation Cooling System (RCIC)

G191174, Sh. 1

1. Motor Operated Valves and RRB-V30

V13-15

(D-7)

V13-16

(D-8)

Q. The staff position is that the Category A valve leak rate requirements are fulfilled by 10 CFR 50, Appendix J, requirements for CIVs and that relief from the Section XI leak rate testing requirements presents no safety problem. However, the licensee must comply with the Analysis of Leakage Rates and Corrective Action Requirements Paragraphs IWV-3426 and 3427 unless specific relief is requested from these paragraphs and subsequently granted by NRC. Revise the Relief Request.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

2. Check Valve V13-22 and RRB-V31

(G-9)

Q. Frequency does not include refueling frequency or (24 month maximum). Revise relief request and testing frequency.

Comments:

LAR

The licensee stated that their definition is that a refueling outage is a subset of cold shutdown. The licensee will provide definition in his program to clarify this intent.

3. Motor Operated Valve V13-41 (N-10)

Q. If this valve serves a containment isolation function with a specified leak rate, it should comply with IWV 3426 and IWV-3427 (reference item 1. above).

Comments: LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

4. Check Valve V13-40 and RRB V-33 (N-11)

Q. Relief request basis does not clearly state words to indicate full stroke exercise testing is required.

Comments: LAR

The licensee stated that the subject relief request will be revised to state full stroke exercising is required and plant procedures will be revised accordingly.

5. Relief Valves G191174, Sh. 2

Q. Provide detailed technical justification for not including these valves in the program and testing as Category C valves as required by IWV-3510.

SR-25 (B-7)
SR-26 (I-7)
SR-27 (J-14)

Comments: R

The licensee stated that these valves are not required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

6. Motor Operated Valve V-1 (13-D)

Q. What is the safety related function of this valves?

Comments: R

The licensee stated that this valve serves no safety related function. It is not required to function to allow RCIC initiation for accident mitigation.

7. Check Valves (K 13 & 10)

V13-70 and V13-133

Q. Provide detailed technical justification for not including these valves in the program.

Comments: OI-L

The licensee stated that the safety related functions of these valves would be reviewed. This is an open item for the licensee.

8. Air Operated Valves

V13-12 (L-10)

V13-13 (L-10)

Q. Provide detailed technical justification for not including these valves in the program.

Comments: R

The licensee stated that the subject valves are not required to function for proper RCIC operation and were therefore not put into the IST program.

9. Air Operated Valves G191174 Sh. 1

V13-32 (H-17)

V13-34 (K-17)

V13-35 (K-17)

Check Valve
V13-140 (I-17)

Q. Provide detailed technical justification for not including these valves in the program.

Comments: R

The licensee stated that the subject valves were for operating convenience and were exempt (under, IWV-1200) from the IST program. The valves are not necessary for proper RCIC operation.

10. Check Valves

Q. Provide detailed technical justification for not including these valves in the program.

V13-SSC-10 (K-8)

V13-29 (J-10)

V13-38 (K-11)

Comments:

LAR

The licensee stated that the subject valves will be added to the IST program since they are required to open for proper operation of the system. The subject valves and the following valves which are already in the program, SSC-13-9, V13-27, and V13-50, will all be designated as Category A. The licensee will provide a generic relief request for IW-3426 and IWV-3427.

11. RRB-V33 for valve V13-40

Q. The alternate testing needs to be revised to clearly assure that the valve is full stroke exercised.

Comments:

LAR

The licensee stated that the subject relief request will be revised to specify full stroke exercising.

V-22 Primary Containment and Atmospheric Control

1. Drywell to Torus Vacuum Breakers G191175 Sh. 1 (J-8)

Q. The program list Valves V16-19-5A-J, however, the drawing indicates A-F and G&H. Which is correct?

Comments:

R

The licensee stated that the program was designated correctly.

2. Relief Request RRB V-36

Q. This relief request or another needs to address IWV-3420 regarding pressure differential testing at lower than functional differential pressures, IWV-3426 Analysis of Leakage Rates and IWV-3427 Corrective Action.

Comments:

R

The licensee stated that the relief request was being deleted since the testing was being done in accordance with Appendix J at the accident pressure Pa = 44 psig. The licensee will use a generic relief request to cover IWV-3426 and IWV-3427.

3. Valves V16-19-12 A/B and RRB V-38 G191175 Sh. 1 (K and N-16)

Q. The relief request does not address testing at cold shutdown and refueling frequency. Quarterly exercise testing was not specified as a requirement in the valve table.

Comments:

LAR

The licensee stated that the relief request would be revised to reference cold shutdown and refueling. The vacuum breakers cannot be exercised during power operation.

- 4. Check Valves G191175 Sh. 1 (I-11)

V16-19-51 and V 16-19-52

Q. What is the safety related function of these valves?

Comments:

LAR

The subject valves are not used and do not perform a safety function. The system is isolated by closed manual valves: V16-19-53 and V16-19-54. As added assurance, valve V16-19-34 will be locked closed.

V-23 Radwaste Systems

G191177 Sh. 1

- 1. Valves V20-82, 83, 94, 95 and RRB-V39

Q. The leak testing does not include requirements of IWV-3426 and IWV-3427 for analysis of leakage and corrective action requirements of the Code.

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

- 2. Dry Well Sump Check Valves

80A	(D-2)
80B	(D-3)
90A	(I-2)
90B	(I-3)

Q. Provide detailed technical justification for not including these valves in the program and categorizing as AC.

Comments:

R

The licensee stated that the subject valves perform no function in shutting down the reactor or in mitigating the consequences of an accident. The lines these valves are in are isolated by a Group 2 containment isolation signal.

V-24 Reactor Water Clear Up System

G191178 Sh.

1. Valves

V12-15	(D-2)
V12-18	(D-3)
V12-66	(C-11)

Q. These valves are listed as Category B. The valves serve as primary containment isolation valves and have a safety function to protect the reactor core in case of a pipe break in the clean up system. They isolate on a reactor water low level. These valves should be Category A and leak tested.

Comments:

LAR

The licensee stated that the valves will be designated Category A. Leak rate testing will be done under Appendix J. The licensee will have a generic relief request for IWV 3426 and IWV 3427.

2. Relief Valves

V12-SR-82	(F-10)
V12-SR-85	(D-10)
V12-SR-84	(G-12)

Q. These valves are not included in the program, however, appear to have a safety function to protect the system against over pressurization. What is the basis for not designating the valves as Category C and testing in accordance with IWV-3510?

Comments:

R

The licensee stated that the subject relief valves are thermal relief valves and do not operate to shutdown the reactor or mitigate the consequences of an accident.

3. Check Valve

V12-62	(B-5)
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Q. This valve appears to be a Category C valve since it functions to close to assure that RCIC flow goes to the core, however, it is not in the program.

Comments:

R

The licensee stated that the subject check valve is not required to operate since motor operated valve V12-68 would already be closed to isolate the subject line. Valve V12-68 is in the IST program, therefore, V12-62 is not included.

V-26 Nuclear Boiler Vessel Instrumentation

1. RRB-V40

Dwg. C191267

Q. The Code stipulates exercising the valves every 3 months or if the valves cannot be exercised every 3 months during plant operations, the valves shall be full stroke exercised during cold shutdown. The relief request for testing does not address the Code required frequency of cold shutdown nor is technical justification provided for not meeting the cold shutdown frequency.

Comments:

LAR

The licensee stated that the testing of these excess flow check valves can only be done when the reactor vessel is at pressure but not operating. This test condition occurs during the reactor vessel hydrostatic test performed during refueling outages. The relief request will be revised to include the required clarification information.

V-27&28 Containment Atmosphere Dilution

Dwg. VY-E-75-002

1. General Comment: Valves which are required to operate or function to bring the reactor to cold shutdown conditions or in mitigating the consequences of an accident should be included in the IST program and tested in accordance with requirements of the Code (Reference IWV-1100). If the valve is required to operate under these conditions, testing is required under the Code and any relief requested from this testing must have a technical basis provided for the specific relief requested. (Also reference to the staff note under item 2. of Primary Containment and Atmospheric Control).

Further, the NRC staff has identified rapid-acting power operated valves as those which stroke in 2 seconds or less. Relief from the trending requirements of Section XI (Paragraph IWV-3417(a)) will be given for these valves since variations in stroke times will be affected by slight variations in the response time of the personnel performing this tests. However, the staff does require that the licensee assign a maximum limiting stroke time of 2 seconds to these valves in order to obtain this Code relief.

Q. The relief request bases in RRB 41, 42 and 43 lack specificity regarding the detailed technical bases for the relief requested. These relief requests need revision.

Comments:

LAR

The licensee stated that revised relief request(s) would be submitted to cover IWV-3417(a). The licensee stated that they will comply with 3417(b) or provide an appropriate relief request. The RRB 41, 42 and 43 will be deleted and the new generic relief request will be referenced.

2. Q. The following valves are designated as passive, however, they serve an active function with the Primary Containment Isolation System (PCIS), therefore, should be designated "Active" and exercised and stroke time tested:

VG-75A-3, -4	(J-14)
VG-9 A/B	(G-12, I-13)
VG-22 A/B	(B-16, E-16)
NG-11 A/B	(G-9)
NG-12 A/B	(I-8)
NG-13 A/B	(I-9)

Comments:

LAR

The licensee stated that VG-75A-3, -4 PCIS signals were removed in order to ensure continuous indication of containment hydrogen concentration. These valves do not receive any automatic isolation signals and are repositioned only by direct operator action. All of the valves will be designated as "active" in the valve listing based upon their PCIS function. All of the valves with the exception of VG-22 A/B are "rapid acting" solenoid valves (VG-22 A/B are motor operated). All will be stroked and timed. A relief request for the rapid action valve stroke time trending will be added to the program.

3. Q. The following valves are designated for alternate testing in accordance with Appendix J. These valves need to comply with IWV-3426, Analysis of Leakage Rates and IWV-3427, Corrective Action of the Code.

FSO-109-76A/B	(L-14)
VG-23	(J-19)
VG-26	(J-19)
VG-9 A/B	(G-12, I-13)
VG-22 A/B	(B-16, E-16)
NG-11 A/B	(G-9)
NG-12 A/B	(I-8)
NG-13 A/B	(I-9)

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

- 4. Q. Technical Specification Table 4.7.2.b require the following valves to be operable, however, the program does not operability test (exercise or stroke time) the valves. Provide detailed technical justification for not including this testing in the program.

Valves:	VG-24	(L-11)
	VG-25	(L-11)
	VG-32	(L-11)
	VG-34	(L-11)
	VG-75 A, 1-4	(J-13, J-14)

Comments:

LAR

The licensee stated that the subject valves will be designated as "active." Each of these valves are "rapid acting" solenoid valves. The valves will be stroked and timed and included in a relief request for relief from stroke time trending based upon rapid operation of 2 seconds or less.

- 5. Relief Valves

NG-34-A, B (A-2, G-2)

Q. Provide detailed technical justification for not testing these valves per requirements of IWV-3510.

Comments:

R

The licensee stated that the subject valves do not have to operate or function to bring the reactor to cold shutdown conditions or in mitigating the consequences of an accident.

V-29 TIP

- 1. Ball Valves A-C and RRB V44

Q. The program "Test Requirements" should show "leak test".

RRB-V44 should show that the valves meet IWV-3426, analysis of Leakage Rates and IWV-3427, Corrective Action.

Quarterly testing of these valves was not stipulated as the test frequency.

Comments:

LAR

The licensee stated that leak test in accordance with Appendix J will

Comments:

LAR

The licensee stated that a new relief request will be included in the IST program to cover valves being leak tested under Appendix J.

The staff will consider the relief request to be acceptable provided the licensee's program is equivalent to or more stringent than IWV-3426 and 3427.

4. Q. Technical Specification Table 4.7.2.b require the following valves to be operable, however, the program does not operability test (exercise or stroke time) the valves. Provide detailed technical justification for not including this testing in the program.

Valves:	VG-24	(L-11)
	VG-25	(L-11)
	VG-33	(L-11)
	VG-34	(L-11)
	VG-75 A, 1-4	(J-13, J-14)

Comments:

LAR

The licensee stated that the subject valves will be designated as "active." Each of these valves are "rapid acting" solenoid valves. The valves will be stroked and timed and included in a relief request for relief from stroke time trending based upon rapid operation of 2 seconds or less.

5. Relief Valves

NG-34-A, B (A-2, G-2)

Q. Provide detailed technical justification for not testing these valves per requirements of IWV-3510.

Comments:

R

The licensee stated that the subject valves do not have to operate or function to bring the reactor to cold shutdown conditions or in mitigating the consequences of an accident.

V-29 TIP

1. Ball Valves A-C and RRB V44

Q. The program "Test Requirements" should show "leak test".

RRB-V44 should show that the valves meet IWV-3426, analysis of Leakage Rates and IWV-3427, Corrective Action.

Quarterly testing of these valves was not stipulated as the test frequency.

Comments:

LAR

The licensee stated that leak test in accordance with Appendix J will be added to the program under alternate testing. The TIP system solenoid valve will be removed from the program since it no longer receives a primary containment isolation signal. The solenoid valve no longer performs a safety function.

The licensee will refer to a generic relief request for meeting IWV-3426 and IWV-3427.

2. Shear Valves A-C

Q. The program legend stipulates testing 20% of the explosive charges every 2 years. This cumulatively test all 4 valves within eight years. Does the manufacturer's guaranteed operating life for the explosive charges exceed the eight years?

Comments:

R

The licensee stated that they have a total of 3 TIP shear valves at Vermont Yankee. The explosive charges in all 3 valves are replaced at a maximum interval of 2 years. The required service life of the replacement charges is verified prior to their installation.

3. Relief Request RRB-V45

Q. The relief request will be acceptable if a maximum stroke time of 2 seconds is assigned. (Reference comment under item 1. of V-27 & 28.)

Comments:

LAR

The subject relief request will be removed from the program per recent design changes to delete the valves containment isolation signal. The subject solenoid valve no longer performs a safety function.

Relief Request Basis

1. RRB GV-2

Q. This relief request needs better definition.

Comments:

LAR

The licensee stated that the relief request would be revised to provide better clarification.

2. RRB GV-4

Q. As previously discussed under V-27 & 28, the NRC staff has identified rapid-acting power operated valves as those which stroke in 2 seconds or less. Relief from trending requirements of IWV-3417(a) will be given for these valves, however, the staff does require that the licensee assign a maximum limiting stroke time of 2 seconds to these valves in order to obtain this Code relief.

Comments:

LAR

The licensee stated that the subject relief request will be revised accordingly.

Miscellaneous Items/Comments

1. Q. Provide pump and valve program listing for spent fuel pool cooling.

Comments:

R

The licensee stated that Vermont Yankee has no accident analysis that requires pumps and valves to operate for fuel pool cooling.

2. Q. Provide the maximum value of limiting stroke time for all power operated valves in the IST program.

Comments:

R

The licensee provided a table listing the quantitative values based upon the plants safety analysis.

3. Q. Provide the documentation that ensures that IWV-3300 is being met. (Remote position indication verification).

Comments:

R

The licensee provided for staff review a copy of the pertinent pages from procedure 4102.03, Revision 14, that provides for Local/Remote Valve Position Indication Tests.

4. Q. Provide latest revisions of drawings for post accident hydrogen control and the updated IST program listing for the pumps and valves for post accident hydrogen control.

Comments:

R

The licensee stated that at Vermont Yankee post accident hydrogen control is provided by the Containment Atmosphere Dilution (CAD) System. CAD is included in the IST program on pages V-27 and V-28.

5. Q. Provide a listing of all valves that perform a pressure isolation boundary between the high pressure reactor coolant system and connected lower pressure piping systems.

Comments:

R

The licensee provided a listing of the subject pressure isolation valves for staff review.

6. Q. During the meeting the staff asked the licensee to provide drawings and information for staff review regarding pumps and valves that would be required to maintain control room habitability in the event of an accident.

Comments:

R

The licensee supplied drawings subsequent to the meeting and stated that there were no pumps or valves within the control room HVAC system which are required to operate to maintain control room habitability.