



Westinghouse
Electric Corporation

Energy Systems

Box 355
Pittsburgh Pennsylvania 15230-0355

NSD-NRC-96-4917
DCP/NSD0687
Docket No.: STN-52-003

December 17, 1996

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: T. R. QUAY

SUBJECT: RESPONSES TO QUESTIONS ON INSERVICE INSPECTION

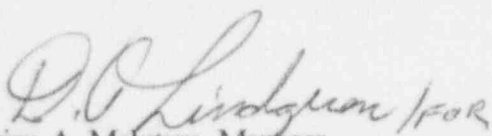
Dear Mr. Quay:

Attached are the responses to open items are related to inservice testing. These are the items identified as open in the NRC letter dated October 11, 1996. The number system of the Attachment to the NRC letter is followed. The changes to the SSAR identified in the responses are included in Revision 10 of the AP600 SSAR.

With this transmittal and receipt of Revision 10 of the AP600 SSAR, these items can be considered to be closed or resolved and the staff can prepare their final safety evaluation report input.

The items related to valve qualification testing are not included in this letter and will be addressed in a separate response.

Please contact Donald A. Lindgren at (412) 374-4856 if you have any questions.


Brian A. McIntyre, Manager
Advanced Plant Safety and Licensing

/jml

attachment

cc: Diane Jackson, NRC, (attachment)

E004 1/1

3028A

9612240089 961217
PDR ADOCK 05200003
A PDR

801 DSER OI 3.9.6.2-4

- Make editorial changes to check valve low differential pressure test description such that it is clear that check valves are tested in both directions.

Response

Revise the two paragraphs under **Check Valve Low Differential Pressure Test** in subsection 3.9.6.2.2 as follows:

Check Valve Low Differential Pressure Tests - Safety-related check valves that perform a safety-related mission to transfer open ~~or transfer closed~~ under low differential pressure conditions have periodic ~~exercising~~-in-service testing to verify the capability of the valve to initiate flow. ~~operate with these conditions.~~

The intent of this in-service test is to determine the pressure required to initiate flow. This differential pressure will verify that the valve will initiate flow at low differential pressure. ~~exercise the valve to the position to fulfill the safety related function(s), at or near design basis conditions (differential pressure and flow). Forward flow and reverse flow in-service testing is individually specified.~~ This low pressure differential in-service test is performed in addition to exercise, ~~forward and/or reverse flow~~-in-service tests.

NRC staff and consultant have previously accepted this proposed change.

- One sentence in 3.9.8.4 on nonintrusive testing is insufficient. The use of disassembly and inspection to complement nonintrusive testing is required. See DSER discussion in Section 3.9.6.2.2, and item #802.

Response

The SSAR has considerably more than one sentence in subsection 3.9.6 on nonintrusive testing. The item in 3.9.6.4 makes reference to subsection 3.9.6.2. The first paragraph under check valve flow tests in subsection 3.9.6.2.2 requires that nonintrusive check valve indication is to be provided for the tests. The third paragraph under check valve flow tests itemizes the nonintrusive diagnostic techniques that may provide alternate means to exercise testing. The NRC staff has previously accepted these words. No SSAR revision is required.

802 DSER OI 3.9.6.2-5

Include a statement that the COL applicant will develop a periodic disassembly and inspection program for all safety-related valves.

Response

Add the following subsection to the SSAR

3.9.6.2.3 Valve Disassembly and Inspection

The Combined License applicant is responsible for developing a program for periodic valve disassembly and inspection. Evaluation of the factors below by the Combined License applicant will determine which of the valves identified in the inservice testing program in Table 3.9-16 will require disassembly and inspection and the frequency of the inspection.

- AP600 PRA importance measures
- Design reliability assurance program contained in SSAR Section 16.2
- Historical performance of valves (identify valve types which experience unacceptable degradation in service.)
- Basic design of valves including the use of components subject to aging and requiring periodic replacement.
- Analysis of trends of valve test parameters during valve inservice tests
- Results of nonintrusive techniques. Disassembly and inspection may not be needed if nonintrusive techniques are sufficient to detect unacceptable valve degradation.

805 DSER 3.9.6.2-8

The requirements to pressure isolation valves have been deleted from the technical specification (SSAR Chapter 16). The basis for this was that there are no risk significant pressure isolation valves, that is no valves that could cause a intersystem LOCA. Valves RNS-PL-V001A & B and RNS-PL-V002A & B are specified with a RCS pressure boundary leak test.

Response

The AP600 does not require that valves be tested as pressure isolation valves for intersystem LOCA or other considerations. The pressure boundary leak test will be deleted from Table 3.9-16 for these valves.

Valves RNS-PL-V002A & B are identified as containment isolation valves, however, no containment isolation test is required.

Response

Normal residual heat removal system containment isolation motor-operated valves (RNS-V002A/B) are not containment isolation leak tested. The normal residual heat removal system is in use during plant shutdowns when containment isolation valves are tested. The basis for the exception is that the normal residual heat removal system is a closed, seismically-designed safety class 3 system outside containment, the valves are closed when the plant is in modes above hot shutdown, and the lines are full of water during normal operation and

post-accident operations which prevents the release of the containment atmosphere radiogas or aerosol.

Note 16 to SSAR Table 3.9-16 will be revised as follows to remove the reference to pressure isolation leak testing and add the reference to not being used when in mode above hot shutdown.

16. Normal residual heat removal system containment isolation motor-operated valves (RNS-V002A/B) are not containment isolation leak tested. The basis for the exception is:
- The valve is submerged during post-accident operations which prevents the release of the containment atmosphere radiogas or aerosol.
 - The RNS is a closed, seismically-designed safety class 3 system outside containment.
 - The valves are closed when the plant is in modes above hot shutdown
 - ~~— These valves are leak tested as a part of the RCS pressure boundary. Although the tests measures water rather than gaseous leakage and has different acceptance criteria, the results will show that the valve is intact. —~~

In the DSER addressing Generic Issue 105 leak testing is required for pressure isolation valves in the normal residual heat removal system discharge in order to meet intersystem LOCA criteria.

Response

The assessment of intersystem LOCA in WCAP-14425, "Evaluation of the AP600 Conformance to Inter-System Loss-of-Coolant Accident Acceptance Criteria" does not require pressure isolation testing of the isolation valves in the normal residual heat removal system, the chemical and volume control systems, or the liquid radwaste system to satisfy the acceptance criteria. There is no requirement for pressure isolation testing for these valves.

807 DSER 3.9.6.3-1

Comments on testing deferral notes.

Note 4 - No changes were made to address the concern that testing in current PWRs is impractical due to a RPV head vent design problem. Westinghouse should determine whether specifying a valve that will not burp open on a pressure surge is practical. Westinghouse stated that it would evaluate the valve design, and would add additional justification, as required. If a valve can be specified that will not burp open, testing should be performed quarterly.

Response

Westinghouse has evaluated the valves design. The selection of valve type to be used for a given application is based on a number of considerations that include the testing requirements. The design requirements for the head vent valves lead to the use of solenoid valves for this application. Other valve/operator types do not satisfy the requirements as well. No changes to the SSAR are required.

Note 9 - No change was made to address the concern that some current plants are partial stroke testing the accumulator valves at cold shutdown. Additionally SSAR Section 6.3.2.2.7.7 states that these valves are periodically tested during "shutdown conditions" which could be interpreted as cold shutdown. Westinghouse has proposed to only full stroke exercise the valves at refueling outages and stated that they would look at additional justification. Section 6.3.2.2.7.7 should be clarified to be consistent with the inservice testing plan.

Response

The information in subsection 6.3.2.2.7.7 is provided to identify in the context of a systems description that valves are periodically tested and should not be understood to specify the requirements. Requirements for inservice testing are provided in subsection 3.9.6 and Table 3.9-16. Subsection 6.3.2.2.7.7 does not require revision.

Westinghouse has provided sufficient information in note 9 of Table 3.9-16 on the impracticality of quarterly testing of the accumulator valves to support a deferral.

Note 10 - The SSAR does not have a discussion of the impracticality of verifying that the normally open CMT check valves are open quarterly.

Response

Note 10 of SSAR Table 3.9-16 will be revised to include verification of being open as follows:

- 10 This note applies to the PXS CMT check valves (PXS-V016A/B, V017A/B). These check valves are biased open valves and are fully open during normal operation. These valves will be verified to be open quarterly. In order to exercise these check valves, significant reverse flow must be provided from the DVI line to the CMT. These valves are not tested during power operations because the test would cause undesirable thermal transients on the portion of the line at ambient temperatures and change the CMT boron concentration. These valves are not exercised during cold shutdowns because of changes that would result in the CMT boron concentration. Because this parameter is controlled by Technical Specifications, this testing is impractical. These valves are exercised during refueling when the RCS boron concentration is nearly equal to the CMT concentration and the plant is in a mode where the CMTs are not required to be available by the Technical Specifications.

Note 11 - No changes were made to address any of the concerns. Westinghouse stated that they would revise the note to clarify that they would test the containment recirculation check valves every refueling outage and that the note applied to both the code required exercise test and the low differential pressure test and the need to control and measure the water flow and pressure. There are still concerns with the use of a push rod to exercise the valves; a more detailed explanation of the impracticality of designing the system to allow testing with flow should be provided.

Response

Using a device to push open the check valve provides a simple, accurate way to test the valves. The device used to push the valve disk open will measure the opening force. The problems

associated with flow testing of these valve include the lack of an appropriate water source in the vicinity of the valves. Also, with the squib valve in line with the check valve there is no flow path for the water used in the test.

Note 11 of SSAR Table 3.9-16 will be revised as follows:

- 11 This note applies to the PXS containment recirculation check valves (PXS-V119A/B). To exercise these check valves an operator must enter the containment, remove a cover from the recirculation screens, and insert a device ~~rod~~ into the recirculation pipe to push open the check valve. These valves are not exercised during power operations because of the need to enter highly radioactive areas and because during this test the recirculation screen is bypassed. These valves are not exercised during cold shutdown operations for the same reasons. The squib valves are in line with the check valve which blocks the flow path for water that would be used in the test. These valves are exercised during refueling conditions when the recirculation lines ~~screens~~ are not required to be available by Technical Specifications LCOs 3.5.7 and 3.5.8 and the radiation levels are reduced.

Note 12 - The note identified the wrong valves.

Response

Revise the first sentence of SSAR Table 3.9-16 Note 12 as follows:

- 12 This note applies to the PXS IRWST injection check valves (PXS-V122A/B, V124A/B ~~V123A/B~~).

Note 21 - No additional justification to defer testing of a manual and check valve was provided. Westinghouse stated that it would review the valve types and that the note would be revised to only address check valves. Manual valves will be tested quarterly. Westinghouse should ensure that the inservice test plan figure 6.4-2 and Tables 3.2-3 and 3.9-12 are consistent. Figure 6.4-2 (Rev. 9) identifies check valves V008A & B and globe valves V007A & B which should be included in the ISP and Table 3.2-3 and 3.9-12.

Response

Valves VES-PL-V007A & B are normally open valves and are not active. VES-PL-V007A & B and V008A & B are included in Table 3.2-3. VES-PL-V008A & B are included in Tables 3.9-12 and 3.9-16 with a check exercise test.

Revise Note 21 of SSAR Table 3.9-16 as follows

21. Post-72 hour manual or check valves that require temporary connections for inservice-testing are exercised every refueling outage. These valves require transport and installation of temporary test equipment and pressure/fluid supplies. Since the valves are normally used very infrequently, constructed of stainless steel, maintained in controlled environments, and of a simple design, there is little benefit in testing them more frequently. For example, valve PCS-V014A is a simple valve that is opened to provide

the addition of water to the PCS post-72 hour from a temporary water supply. To exercise the valve, ~~the flanged connection outside the auxiliary building would be removed,~~ a temporary pump and water supply is connected using temporary pipe and fittings, and the flow rate is observed using a temporary flow measuring device to confirm valve operation.

Note 28 - This note discusses the impracticality of testing 10-inch motor-operated butterfly valves which isolate the chilled water system to the containment recirculation fan coolers. Westinghouse stated that the water flow is necessary to maintain the air temperatures within technical specification limits. Technical specification 3.6.5 requires the average air temperature to be less than 120°F, or restore the temperature within 24 hours. It appears that the inservice test could be performed with in the LCO, with out a problem. A similar request was made by CE, and after a similar comment by BNL, they revised the note to require testing quarterly, unless site climatic conditions would cause the containment temperature to exceed the limit during testing. Westinghouse is requested to review the proposed testing, and provide additional justification of the impracticality of quarterly testing.

Response

The frequency for these valves will be revised to be quarterly except when conditions would cause the containment air temperature to be exceeded.

Note 28 of SSAR Table 3.9-16 will be revised as follows:

28. This note applies to the chilled water system containment isolation valves (VWS-V058, V062, V082 and V086). Closing any of these valves stops the water flow to the containment fan coolers. This water flow may be is necessary to maintain the containment air temperature within Technical Specification limits. As a result, quarterly exercise testing will be deferred when plant operating conditions and site climatic conditions would cause the containment air temperature to exceed this limit during testing. ~~is not practical. The valves will be exercise tested during cold shutdown.~~

809 DSER 3.9.6.4-2 - Although the SSAR was to revised to include the RTNSS valves, the discussion is unclear. Westinghouse agreed to consider revising the words to so that it is clear that RTNSS valves will be provided with provisions that would allow testing in accordance with the Code.

Response

Valves with RTNSS important missions are required to be tested in accordance with the Code only when such testing is identified as part of the regulatory oversight. Westinghouse has not proposed such a requirement and the NRC staff review of RTNSS implementation has not identified any valves or systems with RTNSS important missions that require inservice testing in accordance with the Code.

The second paragraph of SSAR subsection 3.9.6.2 will be revised as follows:

The AP600 inservice test plan does not include testing of valves in nonsafety-related systems unless they perform safety-related missions. ~~Valves with RTNSS important missions can confirm their availability during operation. This testing confirmation may use be made with temporary~~

instruments or test devices. The AP600 inservice test plan does not include testing of nonsafety-related valves (including RTNSS important valves) because they do not perform safety-related missions. Valves that are identified as having RTNSS important missions have provisions to allow testing and are included in the inservice test plan if inservice testing is identified as part of the regulatory oversight required for RTNSS.

1716 RAI 210.156 - W has submitted a relief request on ADS valves. Comments on this request follows: As discussed in the DSER appendix, sufficient information on the burden or unusual hardship of testing has not been provided in order to approve the alternate testing proposed for the ADS valve in accordance with 10CFR50.55a (a)(3)(ii). Westinghouse agreed to provide additional information to support the hardship of testing every 6 months. Westinghouse should also consider testing quarterly until sufficient experience is gained to support extending the test interval, such as the approach taken with MOV testing.

Response

According to 10CFR50.55a (a)(3)(i) "The proposed alternatives would provide an acceptable level of quality and safety, or" (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The first criterion (i) is the criterion against which the 6 month test frequency should be judged not the following criteria that includes hardship or unusual difficulty. The information provided on this relief request including the final sentence in subsection 3.9.6.3.1 *"The PRA results show that the AP600 meets its safety goals and that the results are not overly dependent on the ADS stage 1/2/3 valves"* shows that an acceptable level of safety is provided.

1726 RAI 210.166 - Valves CVS -PL-V001 and V002 are identified in the ISTP as Category A valves. However, Revision 8 does not specify a leak test nor identifies a safety seat leakage function.

Response

Since a pressure isolation leak test is not required, the ASME IST Category for these valves will be changed to B.

1727 RAI 210.167 - There are inconsistencies between the ISTP (Table 3.9-16) and Table 9.3.1-1 (AOVs). Air-operated valves CVS-V084 and V136A & B are not specified with an "active-to-fail" function in the ISTP.

Response

The safety function for these valves will be changed to Active-to-Failed in Table 3.9-16.

1730 RAI 210.170 - Valve PCS-V014A is a normally closed stop check valve with a safety function to open, however, no check exercise is specified and the valve is identified as a Category B valve. Also no flow meter is installed on the piping or position indicators provided to that would allow the determination of the full stroke open. Westinghouse should provide a note for the stop check valves and the basis for their valve categorization. Valve PCS-V014B is identified in Table 3.2-3 as

required post-72 hours, but is not included in the ISTP. The function of this valve should be reviewed and Table 3.2-3 or 3.9-16 revised if necessary.

Response

Valve PCS-PL-V014A will have a check exercise test added. Valve PCS-PL-V014B is not an active valve. Valve PCS-PL-V014B is used for routing water from alternate sources directly to the water distribution bucket and represents a defense-in-depth function. Table 3.2-3 will be revised to delete the comment about post-72 hours from PCS-PL-V014B.

1731, RAI 210.171 - Westinghouse has not specified an "Active-to-Failed" function for the RPV head vent solenoid valves RCS-PL-V150A-D.

Response

These valves have an active function to move to the open (non-failed) position so an active-to-failed safety function would be incorrect. The power supply to these valves is Class 1E. No changes to the SSAR is required.

1742, RAI 210.182 - Westinghouse has revised the table to require 20% of the squib valves to be tested every 2 years. However, SSAR text, Section 3.9.6.2, states that 20% of the charge will be fired and replaced every 5 years. Additionally, the Code requires the service life to be maintained and reviewed. The text has not been revised to reflect the Code requirements.

Response

In the paragraph for **Explosively Actuated Valves** in subsection 3.9.6.2.2 the frequency specified is 20% every 2 years. The SSAR correctly states the frequency. The SSAR will be revised to reference the Code requirements for service life review as follows.

Explosively Actuated Valves - Explosively actuated valves are subject to periodic test firing of the explosive actuator charges. The inservice tests for these valves is specified in the ASME code. At least 20 percent of the charges installed in the plant in explosively actuated valves are fired and replaced at least once every 2 years. If a charge fails to fire, all charges with the same batch number are removed, discarded, and replaced with charges from a different batch. The firing of the explosive charge may be performed inside of the valve or outside of the valve in a test fixture. The maintenance and review of the service life for charges in explosively actuated valves follow the requirements in the ASME OM Code.

1745, RAI 210.185 - Valve SFS-PL-V037 should be forward flow tested. The ISTP does not reflect this. There is no safety function to open, which is required to relieve pressure during containment isolation. Also thermal relief valve CVS-V100, which was recently added, does not have a safety function to open in the ISTP.

Response

The Transfer Open mission will be added the safety-related missions for valves SFS-PL-V037 and CVS-PL-100.

1747, RAI 210.187 - Westinghouse has not included rupture disks K001A & B or K003 & 004 in the ISTP. The ASME Code treats rupture disks as valves. Westinghouse should include these components in Table 3.9-16 or provide a new table. Also the discussion in the SSAR concerning rupture disks should state that the frequency of replacement is 5 years unless historical data indicate a requirement for more frequent replacement. SSAR Section 5.4.9 states that there are no rupture disks used for pressure relief on the RCS. This appears to be in error with the existence on RCS-K03 and K04.

Response

There are no safety-related rupture disks designated K001A & B in the AP600 reactor coolant system. Rupture disks RCS-PY-K03 & K04 are safety-related rupture disks and will be added to Table 3.9-16.

The second paragraph under Pressure/Vacuum Relief Devices in subsection 3.9.6.2.2 will be revised as follows to address the issue of historical data.

The periodic inservice testing include visual inspection, seat tightness determination, set pressure determination, and operational determination of balancing devices, alarms, and position indication as appropriate. The frequencies for this inservice test is every 5 years for ASME Class 1 or every 10 years for ASME Classes 2 and 3 devices. Nonreclosing pressure relief devices are inspected when installed and replaced every 5 years unless historical data indicate a requirement for more frequent replacement.

The statement in subsection 5.4.9.2 states "The discharge of the safety valve is routed through a rupture disk to containment atmosphere. The rupture disk is provided to contain leakage past the valve, is designed for a substantially lower set pressure than the safety valve set pressure, and does not function as a relief device." The rupture disks cannot be considered an RCS pressure relief device since they do not open to relieve RCS pressure unless the safety valves open first. The rupture disks on the safety valve discharge chambers are functionally equivalent to the rupture disks on pressurizer relief discharge tanks in operating nuclear power plants. These disks are not considered RCS pressure relief devices.

1749, RAI 210.189 - Inconsistencies still exist between Tables 6.2.3-1 (CIVs), 3.9-16 (ISTP), 3.2-3 (Classification of Systems, Components, and Equipment), and 3.9-12 (Class 1, 2, and 3 Active Valves).

Valves in Table 6.2.3-1, But not in Table 3.9-16 or 3.2-2: CVS-V089, RNS-V208, FHS-V001

Valves in Table 3.9-16, but not in 3.9-12: VES-V007A & B

Valves in Table 3.9-12, but not in 3.9-16: VES-V008A & B

Valves in Table 3.2-3, but not in Table 3.9-16: VES-V038A & B (these valves are identified as Class C stop check valves in Table 3.2-3, however per figure 6.4-2 they are Class E globe valves); RNS-V045 (this relief valves protects the RCS pressure boundary (SSASR 5.4.7.1.1) and should be included in the ISTP).

Response

CVS-PL-V089 will be deleted from Table 6.2.3-1. RNS-PL-V208 will be deleted from Table 6.2.3-1. FHS-PL-V001 is at one end of the fuel transfer tube. It is used during refueling and is not an active valve and is not in the ISTP. It is a safety-related valve and will be added to Table 3.2-3.

Valves VES-PL-V007A & B are not included in Revision 9 of Table 3.9-16

Valves VES-PL-V008A & B are included in Revision 9 of Table 3.9-16

Valves VES-PL-V038A & B are Class C, normally-closed globe valves. These valves are not active valves and are not included in the ISTP. Revision 9 of Table 3.2-3 refers to these valves as makeup air stop valves. RNS-PL-V045 is not provided for low temperature pressure relief for the RCS. It is on a 1-inch line on the discharge side of the RNS pumps. The RCS pressure relief function is provided by RNS-PL-V021, which is on Table 3.9-16. RNS-PL-V045 will be added to Table 3.9-16 and 3.9-12 since it provides pressure relief for the safety-related RNS.

1753 - Westinghouse has not revised the SSAR (section 5.4.6) to discuss the function of the ADS bypass test solenoid valves.

Response

The information requested is included as the final paragraph of SSAR subsection 5.4.6.2, Revision 5.

1760, RAI 210.200 - See comments on Note 20 for valve PCS-PL-V014A/B.

Response

See the response for Note 21 for OITS # 807.

Additional comments (BNL Enclosure 1 Section 2.3)

2.3-1 There is still inconsistent Use of OM Code and Section XI. SSAR sections 3.9.6.2 and 3.9.6.3 still reference Section XI (instead of the OM Code). Additionally is an ASME, not an ASME/ANSI Code. Section 5.4.9.4 should reference the OM Code, Appendix I (and not ANSI/ASME OM, Part 1)

Response

Since the requirement to use the ASME OM Code derives from reference in Section XI and not from direct reference in the 10 CFR 50.55a, the reference to Section XI in subsection 3.9.6.2 is appropriate. Also note that in the subsequent sentence the OM code is directly referenced. In the first paragraph of subsection 3.9.6.3 two of the references to Section XI will be revised as follows.

Considerable experience has been used in designing and locating systems and valves to permit preservice and inservice testing required by Section XI of the ASME Code. Deferral of testing to cold shutdown or refueling outages in conformance with the rules of the ASME OM Code when testing during power operation is not practical is not considered a relief request. Relief from the testing requirements of the ASME OM Code ~~Section XI~~ will be requested when full

compliance with requirements of the ASME OM Code ~~Section XI of the Code~~ is not practical. In such cases, specific information will be provided which identifies the applicable code requirements, justification for the relief request, and the testing method to be used as an alternative. Relief requests identified prior to design certification are identified in subsection 3.9.6.3.1.

The reference to ANSI/ASME OM, Part 1 in subsection 5.4.9.4 will be revised when the valve qualification questions are addressed.

The NRC staff and consultants are evaluating the AP600 against current versions of the ASME OM Code yet the NRC has not updated the references in 10 CFR 50.55a that are the legal basis for using the OM Code. Since the NRC staff and consultants have been using the more recent revisions, Westinghouse is not planning to prepare a relief request to use a later version of the OM Code than are referenced in the 1989 Edition of the ASME Code Section XI?

2.3-13 The main feedwater check valves SGS-V058A & B appear to have a safety function to close based on SSAR 10.4.6.1.1, however, they are still not included in the ISTP. Westinghouse should also review the startup feedwater check valves, V256A & B.

Response

Neither the main feedwater check valves nor the startup feedwater check valves are credited to close in the safety analyses. They do not have an active safety function and are not included in the ISTP.

Additional comments (BNL Enclosure 1, New issues as a result of Revision 8 of ISTP)

2. Valves RNS-V021 and V023 need to have Notes 17 and 27 denoted in Table 3.9-16.

Response

Note numbers 17 and 27 will be added to RNS-PL-V021 and RNS-PL-V023 in Table 3.9-16.

3. Class 1 safety and relief valves and Class 2 main steam safety valves in PWRs are required to be tested every 5 years, as well as 20% in 2 years. The 5 year test interval is more restrictive than the 20% requirement and should be included in Table 3.9-16 (this will make the Class 1 requirement consistent with the Class 2/3 interval included in the table, i.e. 10 years). Also the main steam safety valves are required by the Code to be tested in accordance with the Class 1 requirements. This should be discussed in SSAR Section 3.9.6.2.2 (p3.9-95)

Response

The inservice testing type and frequency for the pressurizer safety valves (V005A & B) will be revised as follows:

Class 1 Relief Valve Tests/5 years and 20% in 2 Years

The inservice testing type and frequency for the main steam safety valves V027A & B, V030A & B, V031A & B, and V032A & B will be revised as follows:

Class 2 /3 Relief Valve Tests/5 years and 20% in 2 Years

4. In Table 3.9-12 the PCS valves are duplicated.

Response

The table will be corrected to delete the redundant valves.

5. In discussion of Issue 87 in SSAR 1.9, valves built to Section III are required to be tested in accordance with the ASME Code, "Code for Operation and"

Response

The AP600 position will be revised to include the correct title.

RAI 952.99 - Per SSAR 3.9.6.2.2 (p3.9-95), the forward and reverse inservice test is "individually specified." Westinghouse stated that they would revise this section to be consistent with the approach that all check valves are exercised in both directions and provide additional information on the test method.

Response

This item is in reference to the check valve low differential pressure tests. The commitment for forward and reverse flow testing regardless of the safety-related mission is for check valve flow tests. Testing the specific direction for the low differential pressure tests is appropriate. See OITS #801 for a related SSAR revision.

RAI 952.96 - The DSER states that the functional test done as part of the valve qualification testing by the valve vendor should clearly test the prototypical ADS valves under design basis conditions. The SSAR continues to state that the valves will be tested at conditions determined "with input from type selection testing". The SSAR should be revised accordingly.

Response

This question is about a response to a request for additional information on type testing that was done to evaluate the ADS system design and not about SSAR text. The type testing is not valve qualification testing. Clearly the information from the type testing is valuable information for use in the selection and qualification of ADS valves. The response to RAI does not state nor mean that the type selection test information is the only input into valve selection and qualification. Valve qualification in the SSAR will clearly identify requirements and the response to the RAI does not have to be revised.