CP&L

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

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO NRC RECOMMENDATIONS REGARDING THE SECOND 10-YEAR INTERVAL INSERVICE TESTING PROGRAM

Dear Sir or Madam:

By letter dated February 1, 1999, the NRC staff provided the results of their review of Carolina Power and Light Company's (CP&L's) Harris Nuclear Plant (HNP) second 10-year interval Inservice Testing (IST) Program Plan. In this letter, IST Program Plan anomalies and issues were identified, for which the NRC staff proposed recommendations.

It was requested that these recommendations be addressed within one year, or by the end of the next refueling outage, whichever is later. The anomaly recommendation responses are provided in Enclosure 1, and the issue recommendation responses are provided in Enclosure 2. Questions regarding this matter may be referred to Mr. E. A. McCartney at (919) 362-2661.

Sincerely,

D. B. Alexander

D. B. Alexander
Manager - Regulatory Affairs
Harris Nuclear Plant

MSE

Enclosures (2)

c: Mr. J. B. Brady (NRC Senior Resident Inspector, HNP)
Mr. R. J. Laufer (NRR Project Manager, HNP)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)

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SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO NRC RECOMMENDATIONS REGARDING THE SECOND
10-YEAR INTERVAL INSERVICE TESTING PROGRAM ANOMALIES

Inservice Testing (IST) Program Anomalies Identified During the Review

Inconsistencies and omissions in the licensee's program noted during the course of this review are summarized below. The licensee should resolve these items in accordance with the evaluations, conclusions, and guidelines presented in this report.

1. Several of the containment isolation valves (CIVs) in the licensee's IST program (e.g., 1FW-159, -217, and -277) are identified as Category B or C rather than Category A or A/C valves. Review the function of these valves and categorize them in accordance with position 10 of Generic Letter (GL) 89-04, as appropriate.

   Response: No changes are necessary to the Harris Nuclear Plant (HNP) IST program submittal for this recommendation. The function of the CIVs in the program were reviewed, and this review identified that CIVs are properly categorized in accordance with position 10 of GL 89-04. This position states that "All containment isolation valves (CIVs) that are included in the Appendix J, program should be included in the IST program as Category A or A/C valves." The examples given (e.g., 1FW-159, -217, and -277) are not included in the HNP Appendix J program since Type C seat leakage testing is not required for closed systems. For this system (Feedwater), the attached piping inside containment is considered a closed system. Therefore, these valves were categorized correctly, and no changes are necessary to the HNP IST program submittal.

2. The justification portion of IA-CSJ1 for valve 1IA-819 does not provide the necessary detail. The reviewers agree that cold shutdown is the appropriate test frequency for this valve, however, in subsequent submittals of the IST program the CSJ should be expanded to identify the specific vital functions that could be disrupted by operation of this valve. NUREG-1482, Section 2.4.5, provides guidance on preparing CSJs and ROJs.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to cold shutdown justification IA-CSJ1 to identify, in subsequent submittals of the HNP IST program, the specific vital functions that could be disrupted by operation of valve 1IA-819. The NRC reviewers agree that cold shutdown is the appropriate test frequency for this valve; therefore, changes to the cold shutdown justification are not necessary at this time. As recommended by the NRC reviewers, the justification will be updated in subsequent submittals of the HNP IST program.

3. Refueling justification CB-ROJ1 addresses an extended test frequency for excess flow check valves. The reviewers agree that refueling outage is the appropriate test frequency for these valves. However, the justification is vague about the actual test method that is employed and

the test equipment that must be installed. The equipment used and method employed should be described in more detail in any future submittal. See also, NUREG-1482, Section 2.4.5.

Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to refueling outage justification CB-ROJ1 to describe, in subsequent submittals of the HNP IST program, more details about the equipment used and method employed for testing excess flow check valves. The NRC reviewers agree that refueling is the appropriate test frequency for this valve; therefore, changes to the justification are not necessary at this time. As recommended by the NRC reviewers, the justification will be updated in subsequent submittals of the HNP IST program.

4. Refueling justification CS-ROJ1 addresses several RCP seal water and normal charging check valves. The reviewers agree that refueling is the appropriate test frequency for these valves. However, much of the justification section may not apply to valve 1CS-477. The specific technical justification describing the impracticality of testing valve 1CS-477 either quarterly or during cold shutdowns should be included in the ROJ in subsequent IST program submittals.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to refueling outage justification CS-ROJ1 to include, in subsequent submittals of the HNP IST program, the specific technical justification describing the impracticality of testing valve 1CS-477. The NRC reviewers agree that refueling is the appropriate test frequency for this valve; therefore, changes to the justification are not necessary at this time. As recommended by the NRC reviewers, the justification will be updated in subsequent submittals of the HNP IST program.

5. Refueling justification CS-ROJ6 addresses the reactor coolant system (RCS) normal charging isolation valve bypass valves 1CS-493 and -744. The ROJ identifies the valves as normally closed, but the valve table lists them as normally open. Also, the valve table identifies only a stroke open test, but ROJ6 talks about containment entry to verify valve closure. The IST program should be revised to correct these inconsistencies and to describe how valves 1CS-493 and -774 are individually verified to close.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. The typographical errors have been corrected in the valve table and in refueling outage justification CS-ROJ6. Valves 1CS-493 and 1CS-774 are normally closed and only have a safety function to open as specified in the original IST program valve table. The typographical error in the text of CS-ROJ6 stated, ". . . to verify closure", but has been changed to read, ". . . to verify stroke open". Therefore, no further revision is required to describe how these valves will be individually verified to close. The updated justification will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

6. Refueling justification CS-ROJ7 addresses the boric acid gravity feed line manual isolation and check valves 1CS-525 and -526. The specific technical justification describing the impracticality of testing valve 1CS-526 during cold shutdowns should be included in the ROJ in subsequent IST program submittals.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to refueling outage justification CS-ROJ7 to include, in subsequent submittals of the HNP IST program, the specific technical justification describing the impracticality of testing valve 1CS-526 during cold shutdowns. As recommended by the NRC reviewers, the justification will be updated in subsequent submittals of the HNP IST program.

7. Refueling justification CS-ROJ8 addresses the charging line and pressurizer spray line check valve. However, the ROJ is missing an alternate test section. The ROJ should be revised to include the alternate testing performed on these valves.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. The alternate test section has been added to refueling outage justification CS-ROJ8. This section was inadvertently omitted from the justification, but the information was included in the text of the justification as well as the valve table. The updated justification will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

8. Refueling justification DW-ROJ1 addresses the demineralized water supply to primary containment valve, 1DW-65. The justification identifies the reasons that it is impractical to verify the reverse flow closure of this valve quarterly or during cold shutdowns, however, no justification is provided for not exercising the valve open more frequently than during refueling outages. The licensee should either revise this ROJ to justify deferral of the open exercise test until refueling outages or they should exercise this valve open at the Code required frequency.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to refueling outage justification DW-ROJ1 to include, in subsequent submittals of the HNP IST program, the specific technical justification for not exercising valve 1DW-65 open more frequently than during refueling outages. The updated justification will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

9. Refueling justification FP-ROJ1 addresses the fire water supply check valves, 1FP-349 and -357. The justification identifies the reasons that it is impractical to verify the reverse flow closure of these valves quarterly or during cold shutdowns, however, no justification is provided for not exercising the valves open more frequently than during refueling outages. The licensee should either revise this ROJ to justify deferral of the open exercise test until refueling outages or exercise these valves open at the Code required frequency.

Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to refueling outage justification FP-ROJ1 to include, in subsequent submittals of the HNP IST program, the specific technical justification for not exercising valves 1FP-349 and 1FP-357 open more frequently than during refueling outages. The updated justification will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

10. Refueling justification SI-ROJ1 addresses various category C RCS injection check valves. These valves perform a safety function in the closed direction, however, the "Deferred Test Justification" section of the ROJ does not provide a justification for not verifying the valves closed quarterly or during cold shutdowns. The licensee should either revise this ROJ to justify deferral of the close exercise test until refueling outages or exercise these valves closed at the Code required frequency.

    Response: This recommended change is an administrative enhancement to the HNP IST program submittal. A note has been added to refueling outage justification SI-ROJ1 to include, in subsequent submittals of the HNP IST program, the specific technical justification for not verifying these RCS injection valves closed more frequently than during refueling outages. The updated justification will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO NRC RECOMMENDATIONS REGARDING THE SECOND 10-YEAR INTERVAL INSERVICE TESTING PROGRAM ISSUES

Inservice Testing (IST) Program Issues Identified During the Systems Review

The INEEL staff reviewed the Chemical and Volume Control System (CVCS) and Component Cooling Water (CCW) system. The staff identified each component in these systems listed in the IST program on the plant Piping and Instrumentation Diagrams (P&ID) and evaluated the test(s) designated in the IST program to assess compliance with the applicable American Society of Mechanical Engineers (ASME) Operations and Maintenance (OM) Code test requirements. Related extended test interval justifications, technical positions and relief requests were also assessed. Following this review, the staff assessed the system for completeness (to determine if additional components should have been included in the IST program). This review yielded the following list of issues that should be addressed by the licensee.

Chemical and Volume Control System

1. The IST program, Section 5.2, Valve Table Format, defines the types of tests. Included in those definitions, on pages 20 and 21 of 145, are definitions of the close stroke-time (STC), open stroke-time (STO), close exercise (SC), and open exercise (SO) tests. The SC and SO tests address all exercising requirements of OM-10, Para. 4.2.1. However, the STC and STO tests specifically address only the stroke timing requirements of OM-10, Paras. 4.2.1.4 and 4.2.1.8. These tests are only a subset of the requirements applicable to power operated valves such as valve 1CS-492 (on page 44 of 145). If the STC and STO designations are intended to meet all of the code requirements of exercise tests (OM-10, Para. 4.2.1) in addition to the stroke time requirements of OM-10, Paras. 4.2.1.4 and 4.2.1.8, the definitions should be revised.

   Response: This recommended change is an administrative enhancement to the HNP IST program submittal. The definitions of STC and STO will be updated to include the exercising requirements of OM-10, Paragraph 4.2.1, similar to the definitions of SC and SO which already include this information. This information was inadvertently omitted from the definitions. It is standard industry practice to exercise tests valves in conjunction with their associated stroke-time tests per OM-10. The updated definitions will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

2. Check valve 1CS-167 on valve table page 39 of 145 is listed under the "OM Cat" column as "A/C" however, upstream isolation valves 1CS-165 and –166 are categorized "B." If the volume control tank (VCT) outlet isolation or check valves are incorrectly categorized, the licensee should make the appropriate corrections to the IST program.

Response: No changes are necessary to the HNP IST program submittal for this recommendation. Check valve 1CS-167 was categorized as "A/C" in the valve tables per an HNP engineering evaluation. This evaluation concluded that leakage past 1CS-167 is critical and should be verified by the IST program to be 0.3 gpm or less for this evaluation to remain valid. The evaluation also concluded that the system design is considered adequate with respect to single failure criteria. 1CS-167 is tested for leakage per and HNP operational surveillance test. Therefore, this valve is categorized correctly, and no changes are necessary to the categorization of upstream isolation valves 1CS-165 and 1CS-166.

3. Valves 1CS-168 through –171 are listed as normally open passive valves that perform a safety function in the open position. The only test identified for these valves is a remote position indication verification test (PIT) once every 2 years. These passive valves should be repositioned every 2 years to verify their remote indication in the closed position as required by OM-10, Para. 4.1.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. Per NUREG-1482, Section 4.2.6, "Requirements for Verifying Position Indication," the ASME Code does not require verification of both positions of a valve if the valve has only one safety position. As specified in the original HNP IST program submittal, valves 1CS-168 through 1CS-171 have only one safety position; therefore, no changes are necessary to the HNP IST program submittal.

4. Valve 1CS-217 through –220 on valve table page 41 of 145 are listed as having an open and close safety function. However, the "Test Type" column does not list a stroke-time or exercise test in the open direction. The licensee should exercise and stroke-time these valves in the open direction in accordance with OM-10, Para. 4.1.2.a.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from closed to open) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally open valve must close to satisfy a safety function, then it is stroke time tested in the closed direction. Also, if the valve is required to re-open (after closing) to perform a safety function, then it is stroke time tested in the open position. However, if the same valve is not required to re-open (after closing) to perform a safety function (even if it has an open safety function), then it is not stroke time tested in the open direction. Valves that fit this last example are declared inoperable and applicable Limiting Conditions for Operation (LCOs) are entered whenever they are out of their normal safety position. Since valves 1CS-217 through 1CS-220 are not required to re-open (for accident mitigation after closing for manual switchover to recirculation mode) and are declared inoperable whenever they are out of their normal (open) safety position, then these valves are exercised to the position required to fulfill their safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program submittal.

5. Valve 1CS-235 on valve table page 41 of 145 is listed as having an open and close safety function. However, the "Test Type" column does not list a stroke-time or exercise test in the open direction. The licensee should test this valve in the open direction in accordance with OM-10, Para. 4.1.2.a.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from closed to open) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally open valve must close to satisfy a safety function, then it is stroke time tested in the closed direction. Also, if the valve is required to re-open (after closing) to perform a safety function, then it is stroke time tested in the open position. However, if the same valve is not required to re-open (after closing) to perform a safety function (even if it has an open safety function), then it is not stroke time tested in the open direction. Valves that fit this last example are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. Since valve 1CS-235 is not required to re-open (for accident mitigation after automatically closing on receipt of a safety injection signal) and is declared inoperable whenever it is out of its normal (open) safety position, then this valve is exercised to the position required to fulfill its safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program submittal.

6. Valve 1CS-238 on valve table page 41 of 145 is listed as having an open and close safety function. However, the "Test Type" column does not list a stroke-time or exercise test in the open direction. The licensee should test this valve in the open direction in accordance with OM-10, Para. 4.1.2.a.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from closed to open) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally open valve must close to satisfy a safety function, then it is stroke time tested in the closed direction. Also, if the valve is required to re-open (after closing) to perform a safety function, then it is stroke time tested in the open position. However, if the same valve is not required to re-open (after closing) to perform a safety function (even if it has an open safety function), then it is not stroke time tested in the open direction. Valves that fit this last example are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. Since valve 1CS-238 is not required to re-open (for accident mitigation after automatically closing on receipt of a safety injection signal) and is declared inoperable whenever it is out of its normal (open) safety position, then this valve is exercised to the position required to fulfill its safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program submittal.

7. Valve 1CS-283 on valve table page 41 of 145 is an air-operated valve that fails open, however, the "Safety Pos" column indicates that 1CS-283 has a close safety position. The IST program information may be incorrect or this safety related valve may fail to its non-safety position upon loss of actuator power. The licensee should determine if the IST program information is correct or if changes are needed.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. Per the HNP IST program basis document for valve 1CS-283, "The valve has NO safety function in the OPEN position. This normally closed air operated flow control valve is located in the boric acid makeup supply line to the VCT. It performs the process function in the open position to provide boric acid makeup to the VCT. This function provides the capability of maintaining boric acid concentration in the VCT at the required levels. Additionally, opening this valve provides the operational flexibility of an alternate suction supply flow path to the CSIPs for emergency boration. An Abnormal Operating Procedure identifies an alternate boration flow path as through FCV-113A and FCV-113B. However, FCV-113B is an air operated valve which fails to the closed position on loss of air. The valve is not provided with an accumulator and the actuating air is non-safety related. The primary emergency boration flow path is via 1CS-278 which opens to provide suction to the CSIPs from two 100% redundant boric acid transfer pumps. Redundant emergency boration can be accomplished by aligning the RWST to the CSIP suction. The valves in the latter two boration flow paths are tested to ensure operability and the flow paths themselves satisfy single failure criteria. This valve performs an ACTIVE safety function in the CLOSED position to provide separation between the emergency boration flow path and the boric acid makeup flow path to the VCT. The closed function may be required during emergency boration to ensure proper direction of boric flow to the CSIP suction 1CS-278. The valve fails to the open position and is not provided with an individual actuating air accumulator. It receives its control power from the non-essential bus." Based on this information, the open position for valve 1CS-283 is not a required safety position, and the valve is exercised to the closed position as required by the Code. Therefore, no changes are necessary to the HNP IST Program submittal.

8. Valves 1CS-341, -382, and –423 on valve table page 42 of 145 are listed as having an open and close safety function. However, the "Test Type" column does not list an exercise or stroke-time test for the open direction. The licensee should test these valves in the open direction in accordance with OM-10, Para. 4.1.2.a.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from closed to open) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally open valve must close to satisfy a safety function, then it is stroke time tested in the closed direction. Also, if the valve is required to re-open (after closing) to perform a safety function, then it is stroke time tested

in the open position. However, if the same valve is not required to re-open (after closing) to perform a safety function (even if it has an open safety function), then it is not stroke time tested in the open direction. Valves that fit this last example are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. Since valves 1CS-341, 1CS-382, and 1CS-423 are not required to re-open (for accident mitigation after closing by remote manual switch) and are declared inoperable whenever they are out of their normal (open) safety position, then these valves are exercised to the position required to fulfill their safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program submittal.

9. Valve 1CS-480 on valve table page 43 of 145 is listed as having an open and close safety function. However, the "Test Type" column does not list a stroke-time or exercise test in the close direction. The licensee should test this valve in the close direction in accordance with OM-10, Para. 4.1.2.a.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from open to closed) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally closed valve must open to satisfy a safety function, then it is stroke time tested in the open direction. Also, if the valve is required to re-close (after opening) to perform a safety function, then it is stroke time tested in the closed position. However, if the same valve is not required to re-close (after opening) to perform a safety function (even if it has a closed safety function), then it is not stroke time tested in the closed direction. Valves that fit this last example are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. Since valve 1CS-480 is not required to re-close (for accident mitigation after opening by remote manual switch actuation to provide an alternate flow path for emergency boration) and is declared inoperable whenever it is out of its normal (closed) safety position, then this valve is exercised to the position required to fulfill its safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program submittal.

10. For valves 1CS-483, -486, -488, -491, and –500 listed on valve table page 44 of 145, the discussion contained in CS-ROJ8 does not include a description of the alternate close direction testing that the licensee proposes to perform at the refueling outage frequency. The licensee should revise CS-ROJ8 to identify the alternate testing that will be performed on these valves. For example, it should be explained how verification of obturator movement or travel as specified in OM-10, Para. 4.3.2.4(a) is accomplished during the close exercise test for valves 1CS-488 and –491.

    Response: This recommended change is an administrative enhancement to the HNP IST program submittal. The alternate test section has been added to refueling outage justification CS-ROJ8. This section was inadvertently omitted from the justification, but the information was included in the text of the justification as well as the valve table. In addition, a note has

been added to refueling outage justification CS-ROJ8 to describe, in subsequent submittals of the HNP IST program, more details about how verification of obturator movement or travel is accomplished during the close exercise test for valves 1CS-488 and 1CS-491. The updated justification will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

11. Valves 1CS-487 and –562 listed on valve table pages 44 and 45 of 145, respectively, are air-operated valves that have a passive close safety function and also fail in the close direction. The "Test Type" column does not list a fail stroke closed exercise test (FSC) as required by OM-10, Para. 4.2.1.6. OM-10 does not exempt passive valves from fail-safe testing as indicated by Note 1 of Table 1, "Inservice Test Requirements," therefore, the IST program should be corrected to include this test.

    Response: Changes are necessary to the HNP IST program submittal for this recommendation. Upon further review, valves 1CS-487 and 1CS-562 have neither a safety function in the open position, nor a safety function in the closed position. These valves do not meet the scope requirements of OM-10, Paragraph 1.1, since these valves do not perform a specific function in shutting down a reactor to the cold shutdown condition, in maintaining the cold shutdown condition, or in mitigating the consequences of an accident. Therefore, these valves have been removed from the HNP IST program. Normally closed, valve 1CS-487 is located in the pressurizer auxiliary spray line from CVCS normal charging. This valve has no safety function in the open position since depressurization utilizing the auxiliary spray valve is not relied upon for accident mitigation. In addition, this valve has no safety function in the closed position since two other valves, 1CS-491 and CS-488, provide boundary isolation and since any diversion of emergency boration flow through the pressurizer would still result in dispersion of boron into RCS. Normally closed, valve 1CS-562 is located in the boric acid filter backwash piping to the filter vent drain pot. This valve has no safety function in the open position since backwashing activities on the boric acid filter are not relied upon for accident mitigation. In addition, this valve has no safety function in the closed position since during the time valve 1CS-562 is opened, the boric acid filter manual bypass valve, 1CS-565, is placed in the open position to maintain an emergency boration flow path. Therefore, the closure capability of 1CS-562 is not required for accident mitigation. Therefore, changes are necessary to remove these valves from the HNP IST program.

12. Valve table page 44 of 145 indicates that valve 1CS-487 is a 2 inch globe valve, and that valves 1CS-488 and –491 are 3 inch check valves. However, P&ID 2165-S-1303, grid position C-3 does not show a piping reducer between these valves. Either the P&ID is in error or the valve table is incorrect. The appropriate corrections should be made to address this issue.

    Response: This recommended change is an administrative enhancement to the HNP IST program submittal. The typographical error on the valve table has been corrected to address the issue. 1CS-488 and 1CS-491 are 2-inch, not 3-inch, check valves. As recommended by the NRC reviewers, appropriate corrections have been made to address this issue. The

updated valve table will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

13. Valve 1CS-492 on valve table page 44 of 145 is listed as having an open and close safety function. However, the "Test Type" column does not list a stroke-time or exercise test in the open direction. The licensee should test this valve in the open direction in accordance with OM-10, Para. 4.1.2.a.

    Response: No changes are necessary to the IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from closed to open) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally open valve must close to satisfy a safety function, then it is stroke time tested in the closed direction. Also, if the valve is required to re-open (after closing) to perform a safety function, then it is stroke time tested in the open position. However, if the same valve is not required to re-open (after closing) to perform a safety function (even if it has an open safety function), then it is not stroke time tested in the open direction. Valves that fit this last example are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. Since valve 1CS-492 is not required to re-open (for accident mitigation after closing by remote manual switch actuation to isolate the normal charging flow path) and is declared inoperable whenever it is out of its normal (open) safety position, then this valve is exercised to the position required to fulfill its safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program.

14. The discussion contained in CS-ROJ6 indicates that check valve 1CS-744 is "spring loaded to restrict opening during normal operation." This would indicate that the normal position for series valve 1CS-493 is also closed. However, the "Normal Position" indicated by CS-ROJ6 and valve table pages 44 and 45 of 145 is open for both valve 1CS-493 and –774. This apparent inconsistency in the IST program should be corrected.

    Response: This recommended change is an administrative enhancement to the HNP IST program submittal. The typographical error on the valve table and CS-ROJ6 has been corrected to address the issue. Valves 1CS-493 and 1CS-774 are normally closed, rather than normally open valves as specified in the original HNP IST program submittal. The normal position of the valves was correctly specified in the text of the HNP IST program basis document. As recommended by the NRC reviewers, appropriate corrections have been made to address this issue. The updated valve table and CS-ROJ6 will be submitted in conjunction with other administrative updates in subsequent submittals of the HNP IST program.

15. Valve 1CS-559 and –563 listed on valve table pages 44 and 45 of 145, respectively, are air-operated plug valves that have a passive open safety function and also fail in the open direction. The "Test Type" column does not list a fail stroke open exercise test (FSO) as required by OM-10, Para. 4.2.1.6. OM-10 does not exempt passive valves from fail-safe

testing as indicated by Note 1 of Table 1, "Inservice Test Requirements," therefore, the IST program should be corrected to include this test.

Response: No changes are necessary to the HNP IST program submittal for this recommendation. Valves 1CS-559 and 1CS-563 have no safety function in the closed position, perform a passive safety function in the open position, and also fail in the open direction. These valves are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. These valves are remote position indication verification tested (PIT) at least once every two years per OM-10, Paragraph 4.1, but are not repositioned during this test since the Code does not require repositioning of passive valves which are already in their safety position. Similarly, these valves are not required to be repositioned to perform fail-safe testing since these valves are already in their failed safety positions. Therefore, no changes are necessary to the HNP IST program submittal.

16. Valves 1CS-745 and –753 listed on valve table page 45 of 145 are listed as having an open and close safety function. However, the "Test Type" column does not list a stroke-time or exercise test in the open direction. The licensee should test these valves in the open direction in accordance with OM-10, Para. 4.1.2.a.

    Response: No changes are necessary to the HNP IST program submittal for this recommendation. OM-10, Paragraph 4.2.1.2.a, requires valves to be exercised "to the position(s) required to fulfill its function(s)." If a valve is required to change positions (such as travel from closed to open) to perform a safety function, then it is stroke time tested in that direction. If it does not have to change positions to perform a safety function, then it is not stroke time tested in that direction. For example, if a normally open valve must close to satisfy a safety function, then it is stroke time tested in the closed direction. Also, if the valve is required to re-open (after closing) to perform a safety function, then it is stroke time tested in the open position. However, if the same valve is not required to re-open (after closing) to perform a safety function (even if it has an open safety function), then it is not stroke time tested in the open direction. Valves that fit this last example are declared inoperable and applicable LCOs are entered whenever they are out of their normal safety position. Since valves 1CS-745 and 1CS-753 are not required to re-open (for accident mitigation after closing for manual switchover to recirculation mode) and are declared inoperable whenever they are out of their normal (open) safety position, then these valves are exercised to the position required to fulfill their safety function as required by the Code. Therefore, no changes are necessary to the HNP IST program submittal.

Component Cooling Water System

1. Motor-operated gate valves 1CC-176 and –202 listed on valve table page 29 of 145 are indicated as being CIVs. However, the valve table lists the "OM Cat" for these valves as "B." The licensee should review the function of these valves to determine if they should be classified as category "A" and be leak-rate tested to verify that the appropriate leakage criteria is met.

Response: No changes are necessary to the HNP IST program submittal for this recommendation. The functions of valves 1CC-176 and 1CC-202 were reviewed, and this review identified that these CIVs are properly categorized in accordance with position 10 of GL 89-04. This position states that "All containment isolation valves (CIVs) that are included in the Appendix J, program should be included in the IST program as Category A or A/C valves." Valves 1CC-176 and 1CC-202 are not included in the Appendix J program since Type C seat leakage testing is not required for closed systems. For this system (Component Cooling Water), the attached piping inside containment is considered a closed system. Therefore, these valves were categorized correctly, and no changes are necessary to the HNP IST program submittal.

2. Relief valves 1CC-186 and –194 listed on valve table page 29 of 145 are indicated as being CIVs. However, the valve table lists the "OM Cat" for these valves as "C." The licensee should review the function of these valves to determine if they should be classified as category "A/C" and be leak-rate tested to verify that the appropriate leakage criteria is met.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. The functions of valves 1CC-186 and 1CC-194 were reviewed, and this review identified that these CIVs are properly categorized in accordance with position 10 of GL 89-04. This position states that "All containment isolation valves (CIVs) that are included in the Appendix J, program should be included in the IST program as Category A or A/C valves." Valves 1CC-186 and 1CC-194 are not included in the Appendix J program since Type C seat leakage testing is not required for closed systems. Therefore, these valves were categorized correctly, and no changes are necessary to the HNP IST program submittal.

3. Valve 1CC-337, on P&ID 2165-S5-1322, Coordinates J-5, is not in the IST program. The licensee should review the function of this valve to determine if its fail-safe operation is a required safety function. If it is a required function, the valve should be included in the IST program and be tested to the Code requirements.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. The function of valve 1CC-337 was reviewed, and this review identified that this valve does not have a Code required safety function. Check valve 1CC-565, in parallel with valve 1CC-337, does perform an active safety function in the open position as thermal relief protection for the Letdown Heat Exchanger. This valve is listed in the HNP IST program submittal on valve table page 32 of 145 of HNP-IST-002, Revision 0. Therefore, these valves were categorized correctly, and no changes are necessary to the HNP IST program submittal.

4. Valve 1CC-202 on P&ID 2165-S-1321, Coordinates B-10, is not in the IST program. The licensee should review this valve to determine if it performs a safety related function. If it performs a safety related function, the valve should be included in the IST program and be tested to the Code requirements.

Response: No changes are necessary to the HNP IST program submittal for this recommendation. Valve 1CC-202 is listed in the HNP IST program submittal on valve table page 29 of 145 of HNP-IST-002, Revision 0. Since the valve is included in the original HNP IST program submittal, no changes are necessary to the HNP IST program submittal.

General Note

1. Our review of the CVCS and CCW systems revealed that few, if any, manual valves from these systems are included in the IST program (manual valves in some other systems are included in the program). In NUREG 1482, Section 4.4.6, the NRC clarified their position on manual valves. This section reads in part: "The Code includes manual valves that meet the scope requirements of 10 CFR 50.55a. To comply with the Code, exercising requirements for a manual valve must be in accord with applicable IST requirements of IWV or OM-10 if the manual valve is credited in the safety analysis for being capable of being repositioned to shut down the plant, to maintain the plant in a safe shutdown condition, or to mitigate the consequences of an accident... Applicable inservice tests could include exercising (but not stroke timing), leak testing, and position indication verification, at the frequency specified in the code, as practical. Passive manual valves that have position indication would be subject to position indication verification." The licensee should verify that the Shearon Harris Nuclear Power Plant IST Program is in compliance with the NRC position on manual valves.

   Response: No changes are necessary to the HNP IST program submittal for this recommendation. The functions of manual valves in the program were reviewed, and this review identified that manual valves are properly categorized in accordance with NUREG 1482, Section 4.4.6. This position reads, in part, that the Code requires manual valves to be exercised, "if the manual valve is credited in the safety analysis for being capable of being repositioned to shut down the plant, to maintain the plant in a safe shutdown condition, or to mitigate the consequences of an accident . . . Passive manual valves that have position indication would be subject to position indication verification." Twenty-six (26) manual valves are included in the HNP IST program since they are credited in the safety analysis for performing a safety function. Eight (8) of these manual valves have position indication and are tested to verify remote position indication. Only one (1) manual valve in the CVCS or CCW systems, 1CS-526, listed on valve table page 44 of 145 of HNP-IST-002, Revision 0, is required by the Code to be exercised. Manual valve 1CS-526 is included in the HNP IST program. Based on this information, the manual valves were categorized correctly, and no changes are necessary to the HNP IST program submittal.