

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-354/84-12 Docket 50-354 License CPPR-120

Licensee: Public Service Electric and Gas Company

Facility: Hope Creek Generating Station

Inspection At: Hancock's Bridge and Newark, New Jersey

Conducted: August 6 - September 16, 1984

Inspector: W. H. Bateman
W. H. Bateman, Senior Resident Inspector

9/28/84
Date

Approved: Jack Strosnider
J. Strosnider, Chief, Project Section 1C

10/17/84
Date

Summary:

August 6 - September 16, 1984 (Report No. 50-354/84-12): The NRC Senior Resident Inspector performed a routine inspection (84 hours) of work in progress, including hydrostatic testing, pipe hanger installation, torus sand blasting, core boring, and drywell shell modifications for reactor vessel water level instrumentation. The inspector also made tours of the site, reviewed licensee action on previous inspection findings, reviewed startup group personnel qualifications, evaluated turnover packages, and reviewed the closure status of NRC Bulletins and Circulars.

One violation was identified involving three instances where the startup preoperational review committee (PORC) failed to follow procedures as described in paragraph 3. Thirty-one bulletins were reviewed and 24 were closed. Seven circulars were reviewed and closed. Questions were raised and resolved regarding the use of two ASME Code Cases involving hangers and hydrostatic testing. Additional information was gathered and forwarded to NRC licensing regarding the heavy walled pipe fitting issue. Component/system and facilities turnovers appeared to be in conformance with procedure requirements.

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DETAILS

1. Persons Contacted

Public Service Electric and Gas Company (PSE&G)

A. Barnabei, Principal QA Engineer
J. Ciccone, Manager Startup and Test
G. C. Conner, Operations Manager
E. Devoy, Principal Engineer
A. E. Giardino, Manager, QA Engineering and Construction
R. Griffith, Principal Staff QA Engineer
M. Metcalf, Principal Startup QA Engineer
A. Sternberg, Principal QA Engineer

Bechtel Construction, Inc. (Bechtel)

I. Booher, Subcontracts
W. Cole, Lead Site QA Engineer
J. Dahnert, Lead Pipe & Hanger QC Engineer
G. Coldsmith, Resident Engineering
N. Griffin, Project Field Engineer
C. Headrick, Project QC Engineer
D. Little, Project Superintendent
D. Long, Field Construction Manager
R. Mackey, Assistant Resident Project Engineer
G. Moulton, Project QA Engineer
B. Mukherjee, Resident Project Engineer
D. Sakers, Assistant Project QC Engineer
J. Serafin, Assistant Project Field Engineer
C. Turnbow, Manager of Construction
S. Vezendy, Assistant Project QC Engineer

General Electric Nuclear Energy Business Operations (GENEBO)

J. Cockroft, Site Engineer
R. McKenna, Chief Site Engineer
C. Brinson, Site QA Manager

O. B. Cannon & Son, Inc.

J. Lipinsky, Quality Assurance Director

2. Site Tour

Routine inspections were made to observe the status of work and construction activities in progress. The inspector noted the presence of and interviewed QC and construction personnel. Inspection personnel were observed performing required inspections and those interviewed were knowledgeable in their work activities. Work items were examined for obvious defects or noncompliance with regulatory requirements or license conditions. Areas inspected included housekeeping, storage of materials and equipment, and weld rod control. No unacceptable conditions were identified.

3. Overall Preoperational Test Program

The inspector reviewed the qualifications of personnel assigned to the pre-operational review committee (PORC) and the adherence of PORC to controlling procedures. The following documents were part of this review:

- Startup Administrative Procedure (SAP) No. 14, Preoperational Test Review Committee, Rev. 0
- SAP-15, Personnel Certification, Rev. 1
- SAP-24, Preoperational Test Procedure, Format and Instructions, Rev. 2
- ANS-3.1-1978, Selection and Training of Nuclear Power Plant Personnel
- Hope Creek Generating Station Final Safety Analysis Report, Section 14, Initial Test Program
- USNRC Regulatory Guide 1.58, Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel (September 1980)
- ANSI N45.2.6-1978, Qualifications of Inspection, Examination, and Testing Personnel for Nuclear Power Plants
- PORC Meeting Minutes for meetings 12, 13, 15, 16, and 19-21.

This review disclosed one violation (Notice of Violation is attached as Appendix A) that consists of three instances of failure of startup personnel to follow procedures.

- (1) At PORC Meeting No. 16, Pre-Op Test Procedure (PTP) PJ-1 was approved with certain outstanding action items. The various controlling procedures did not address how to handle these action items, but the PORC Meeting Minutes stated the action items were to be recorded on SAP-4 Form 4-3 and forwarded to Startup Document Control for filing with the controlled master copy of PJ-1. An inspection of this file revealed the outstanding comments were not part of the file nor had a Form 4-3 been initiated. The date of the meeting was May 22, 1984. The failure of Startup's controlling procedures to address the control of action items against test procedures and the failure of PORC to followup on their own commitments is contrary to Criterion V of Appendix B of 10 CFR 50. (354/84-12-01)
- (2) Paragraph 4.3.b of SAP-14 requires that the Startup Manager or his designee assure that the author of each PTP is present during PORC review of the procedure. A review of PORC meeting attendees disclosed that the authors for PTP's SG-1, EE-1, and PH-1 were not present when PORC approved their procedures. These three procedures represent 27% of the PTP's approved by PORC at the time of this inspection. The failure of the Startup Manager to assure the presence of PTP authors at the PORC review meetings is contrary to Criterion V of Appendix B of 10 CFR 50. (354/84-12-02)
- (3) Paragraph 6.2.2.C of SAP-24 requires written approval of each PTP by all responsible parties listed in paragraph 6.2.1 prior to PORC review and approval. A comparison of PORC meeting dates against responsible party signoff dates indicated that for PTP's SG-1, EC-1, EE-1, JE-1, SE-2, SE-1, PK-1, and PJ-1, the responsible parties had not signed and approved these procedures prior to the PORC meeting. In the case of PTP EE-1, just over one month passed from the time PORC reviewed the procedure until the responsible parties had signed their approval. The PTP's listed above represent 72% of the total approved by PORC at the time of this inspection. It should be pointed out that at no time did the PORC Chairman sign his approval of the procedure prior to the responsible parties. The failure of PORC to execute procedural requirements that require written approval of PTP's by specified responsible parties prior to PORC review is contrary to Criterion V of Appendix B of 10 CFR 50. (354/84-12-03)

A review of personnel qualifications revealed a discrepancy between FSAR commitment and actual practice. In particular paragraph 14.2.2.8 of Chapter 14 of the FSAR states, "The minimum qualifications of personnel responsible for developing preoperational test procedures, performing pre-

operational test reports are as follows:

- a. Bachelor of Science degree in engineering or related sciences
- b. One year of power plant experience.

The qualifications of the PORC in total must meet that of Section 4.4.6.3 of ANS 3.1 draft (April 1981)."

The inspector determined that some individuals who had responsibilities, as delineated above, did not meet the educational requirements. The licensee responded to this concern by stating SAP-15 allows substitution of experience for a college degree. The inspector agreed that there was an inconsistency between the FSAR to clarify that experience may be substituted for a college degree. This clarification was in progress at the end of the reporting period. It was also determined that no member of PORC met the ANS 3.1 paragraph 4.4.6.3(1) requirements of an Operations Manager or Technical Manager. However, the inspector felt, based on a review of the resumes of certified PORC personnel, that the overall PORC committee was qualified to review and approve procedures. Based on this position, the licensee stated that the FSAR would be amended to clarify and make consistent the requirements for PORC membership. This action was also underway at the end of the reporting period.

The inspector had no further questions.

4. Review of Closure Status of NRC Issued Bulletins and Circulars

The inspector met with the Response Coordination Team Chairman to review the closure status of NRC bulletins and circulars. As a result of this effort, 31 bulletins and seven circulars were reviewed, and 24 bulletins and seven circulars were closed. A list of the bulletins and circulars reviewed and actions taken follows:

<u>Bulletin No./Status</u>	<u>Description</u>
73/01/Open	<u>Faulty Overcurrent Trip Delay Device in Circuit Breakers for Engineered Safety Systems:</u> A determination remains to be made that these breakers are not installed in safety-related systems.
73-03/Closed	<u>Defective Hydraulic Shock Suppressors and Restraints:</u> No Bergen-Patterson hydraulic shock suppressors and restraints are used at Hope Creek by either Bechtel or GE. They are included on the Bechtel Index of Potentially Defective Equipment (IPDE). The portion of this Bulletin that implies the need for a surveillance program is being tracked by the closure status of Bulletin 75-05.

<u>Bulletin No./Status</u>	<u>Description</u>
73-04/Closed	<u>Defective Bergen Patterson Hydraulic Shock Absorbers:</u> No Bergen-Patterson hydraulic shock absorbers and restraints are used at Hope Creek, therefore, this Bulletin is not applicable. Required periodic surveillance inspections will be addressed by licensee in their response to Bulletin 75-05.
73-05/Closed	<u>Manufacturing Defects in Boiling Water Reactor Control Rods:</u> GE confirmed the Hope Creek design does not have the problems described in this Bulletin. The defects were corrected before the Hope Creek control rods were manufactured.
74-01/Closed	<u>Valve Deficiencies:</u> The licensee and Bechtel reviewed safety-related purchase orders and determined no Walworth motor operated valves or Darling 2" valves are installed in safety-related systems at Hope Creek. These items are included on the IPDE.
74-03/Open	<u>Failure of Structural or Seismic Support Bolts on Class 1 Components:</u> The issue of bolting failures is being addressed within the NRC as Generic Issue B-29 and covers the Staff's concern with both pressure boundary and component support bolting. The licensee has identified potential problem areas and is waiting for a NRC Staff position. Although the directed steps in this Bulletin cannot be taken because Hope Creek has no operating experience, the issue of bolting failures will cause this Bulletin to remain open until the NRC Staff states its position and the licensee responds.
74-04,04A/Closed	<u>Malfunction of Target Rock Safety Relief Valves:</u> The Hope Creek Target Rock safety relief valves were manufactured three years after this Bulletin was issued. A review of the manufacturing drawing by the licensee determined that the Bulletin fix had been incorporated into the valves used at Hope Creek.

<u>Bulletin No./Status</u>	<u>Description</u>
74-08/Closed	<u>Deficiency in ITE Molded Case Circuit Breakers, Type HE-3:</u> A review of all safety-related equipment purchase orders determined that the subject breakers are not installed in any safety-related equipment at Hope Creek. This breaker type is included on the IPDE.
74-09/Closed	<u>Deficiency in General Electric Model 4KV MAGNE-Blast Breakers:</u> A review of all safety-related purchase orders determined that the subject breakers are not installed in any safety-related equipment at Hope Creek. This breaker type is included on the IPDE.
74-10,10A,10B/Closed	<u>Failures in 4-Inch Bypass Piping at Dresden 2:</u> Bypass lines around the discharge valves of the recirculation system pumps are not included in the Hope Creek design.
74-13/Closed	<u>Improper Factory Wiring on General Electric Motor Control Centers at Fort Calhoun:</u> Hope Creek does not use GE MCC's. Cutler-Hammer MCC's containing Cutler-Hammer breaker-starters are used at Hope Creek. Okonite, not GE Vulkene "600", cable was used as part of the breaker-starter wiring.
74-15/Closed	<u>Misapplication of Cutler-Hammer Three Position Maintained Switch Model No. 10250T:</u> In a letter to the NRC dated 1/8/75, the licensee stated the subject switches are not used at Hope Creek. This switch is included on the IPDE.
74-16/Closed	<u>Improper Machining of Pistons in Colt Industries (Fairbanks-Morse) Diesel-Generators:</u> The improper machining of pistons was identified as a problem prior to the award of the Hope Creek D-G purchase order. The problem was identified in 1974 and was related to D-G type H7B. The Hope Creek purchase order was awarded 2/7/77 and was for type PC2.3V.

Bulletin No./StatusDescription

75-01,01A/Closed

Through-Wall Cracks in Core Spray Piping at Dresden-2: Hope Creek was not operational at the time of issuance of this Bulletin. Since the issuance of this Bulletin, the topic of IGSCC has become a major issue in the nuclear industry. Hope Creek has used low carbon stainless steel or buttered and stress relieved the ends of all stainless steel pipe that is not low carbon as part of an effort to try and eliminate IGSCC within the reactor coolant pressure boundary. The issue of IGSCC is a contention in the licensing hearing for Hope Creek and will, therefore, be adequately addressed in that forum.

75-04,04A,04B/Open

Cable Fire at Browns Ferry Nuclear Power Station: The FSAR addresses the majority of the Bulletin's concerns. This Bulletin will remain open, however, pending Electric Production Department's incorporation of fire protection measures during modifications and maintenance into plant procedures.

75-05/Open

Operability of Category 1 Hydraulic Shock and Sway Suppressors: The licensee must respond to paragraph 1.c of the Bulletin wherein they are required to describe the hydraulic snubber surveillance program that will be used throughout the life of Hope Creek. Paragraph 1.a and 1.b were satisfactorily addressed in the 6/19/75 response letter.

75-06/Closed

Defective Westinghouse Type OT-2 Control Switches: The subject spring-return-to-neutral switches are not used in any safety-related systems at Hope Creek. This switch type is included on the IPDE.

Bulletin No./StatusDescription

76-07/Closed

Crane Hoist Control-Circuit Modifications:
The Hope Creek polar crane hoist control was manufactured with two speeds. No modifications have been made to the hoist control supplied by the manufacturer. The polar crane has been load tested to 125% of rated load and performed satisfactorily at both speeds. Additionally, the crane has been in use to support plant construction with no reported problems.

78-14/Open

Deterioration of Buna-N Components in ASCO Solenoids: As described in Bechtel letter BLP 15944, a list of all ASCO solenoid valves has been established and each valve will be refurbished. GE has completed refurbishment of those ASCO solenoid valves within their scope of supply. This Bulletin will remain open pending establishment by the licensee of a three year maximum replacement schedule to cover that period of time between system turnover and commercial operations.

79-10/Closed

Requalification Training Program Statistics:
This Bulletin is not applicable to Hope Creek. Hope Creek is under construction and has no licensed operators, therefore, no failure rate data on annual requalification examinations.

79-16/Closed

Vital Area Access Controls: The licensee determined that vital area access control requirements discussed in the Bulletin are satisfied by the Hope Creek security design. The security design and plan have been submitted to NRC licensing for review and approval.

79-27/Closed

Loss of Non-Class 1E Instrumentation and Control Power System Bus During Operation:
FSAR Question 421.42 (DSER Open Item No. 199) specifically requested the licensee to address the concerns expressed in this Bulletin. In

<u>Bulletin No./Status</u>	<u>Description</u>
79-27/Closed (con't)	<p>response to this request, the licensee performed an analysis and issued a report in 8/84 entitled "Cold Shutdown/Power Bus Failure Analysis Report." This report concluded there is no situation where a single bus power failure would prevent plant personnel from achieving a safe shutdown condition. The review showed that control room personnel will have knowledge of individual bus and/or circuit failures and that the operator has alternate instruments and shutdown paths available to achieve cold shutdown. Additionally, it was determined by the licensee that, as a result of this analysis, no changes to present plant design and procedures are indicated. This Bulletin is closed based on the results of the licensee's analysis and subsequent NRC licensing review of the acceptability of the analysis.</p>
80-20/Closed	<p><u>Failures of Westinghouse Type W-2 Spring-Return-to-Neutral Control Switches:</u> This Bulletin was discussed previously in NRC Inspection Report 83-16. Various plant walkthroughs by the inspector have not identified any of the subject switches. The switches are included on the IPDE.</p>
81-02, 81-02 Supplement 1/Closed	<p><u>Failure of Gate Type Valves to Close Against Differential Pressure:</u> By letter dated 3/22/84, the licensee stated that written responses were received from all suppliers of safety-related equipment stating none of the subject valves are used at Hope Creek. These valves are included on the IPDE.</p>
82-03/Open	<p><u>Stress Corrosion Cracking in Thick-Wall Large Diameter, Stainless Steel, Recirculation System Piping at BWR Plants:</u> The licensee has taken various steps to preclude IGSCC. These include the use of low carbon stainless steel,</p>

<u>Bulletin No./Status</u>	<u>Description</u>
82-03/Open (con't)	corrosion resistant cladding, and buttering and furnace solution heat treatment of recirculation piping field weld end preparations and changeout of the recirculation piping safe ends and thermal sleeves. This Bulletin will remain open pending licensee discussion of their UT inspection techniques to include effectiveness of detection capability.
83-01/Closed	<u>Failure of Reactor Trip Breakers (Westinghouse DB-50) to Open on Automatic Trip Signal:</u> The subject breakers are not used in the reactor protection system (RPS) at Hope Creek. The RPS at Hope Creek is supplied by GE and utilizes GE molded case circuit breakers which have an undervoltage trip attachment of a different design. (Refer also to Bulletin 83-04 and Information Notices 83-18 and 83-76.)
83-03/Closed	<u>Check Valve Failures in Raw Water Cooling Systems of Diesel Generators:</u> The EDG's at Hope Creek are cooled by the Safety Auxiliary Cooling System (SACS). There are no check valves in the supply and return lines from the main SACS headers. There are check valves, however, in the discharge side of the SACS pumps. Inservice testing in accordance with Bulletin requirements is planned for these four check valves as stated in Southwest Research Institute's valve testing guidelines and valve data sheets for Hope Creek.
83-04/Closed	<u>Failure of the Undervoltage Trip Function of Reactor Trip Breakers:</u> GE AK-2 circuit breakers are not used in safety-related systems at Hope Creek. These breakers are included on the IPDE.

Bulletin No./StatusDescription

83-08/Closed

Electrical Circuit Breakers with an Undervoltage Trip Feature in Use in Safety-Related Applications other than the Reactor Trip System: Circuit breakers with an undervoltage trip assembly are not used in safety-related applications at Hope Creek other than in the RPS. RPS breakers are addressed in Bulletins 83-01 and 83-04.

84-01/Closed

Cracks in Boiling Water Reactor Mark 1 Containment Vent Headers: Hope Creek had no operating experience at the time of issuance of this Bulletin. The following steps have been or will be taken to address the issue:

- (1) N₂ vapor temperature downstream of the steam vaporizer unit will be limited to a minimum of 40°F. Controls will stop the flow of N₂ from the steam vaporizer if N₂ vapor temperature drops below 40°F.
- (2) An alarm will be installed in the Control Room to alert personnel of low N₂ vapor temperature downstream of the steam vaporizer. Until this alarm is installed, plant personnel will man the N₂ inerting system during operation to assure proper temperature control.

Circular No./StatusDescription

76-01/Closed

Crane Hoist Control-Circuit Modifications: See response to Bulletin 76-07.

76-04/Closed

Neutron Monitor and Flow Bypass Switch Malfunctions: The licensee responded to this Circular by letter dated 11/10/76 and stated they had not purchased this type of switch and, as design progressed and the need arose to purchase this type of switch, it would be a modified type that would not experience metal creep phenomena.

<u>Circular No./Status</u>	<u>Description</u>
<u>76-06/Closed</u>	<u>Stress Corrosion Cracks in Stagnant, Low Pressure Stainless Piping Containing Boric Acid Solution at PWR's:</u> This issue was also addressed in Bulletin 79-17 (closed in NRC Inspection Report 81-07). Type 304L stainless steel is used in the Standby Liquid Control system which is the only system normally subject to a boron concentration. The low carbon content in this type of stainless steel controls the IGSCC problem.
<u>78-17/Closed</u>	<u>Inadequate Guard Training/Qualification and Falsified Training Records:</u> The "Hope Creek Security Training and Qualification Plan" dated 7/7/83 addresses the Circular's concerns. This plan is modeled after Salem Station's plan. The Hope Creek plan will be reviewed and approved by NRC licensing.
<u>79-03/Closed</u>	<u>Inadequate Guard Training/Qualification and Falsified Training Records:</u> This Circular was addressed to holders of special nuclear material licensees. The issue was addressed by power plant licensees in Circular 78-17.
<u>79-08/Closed</u>	<u>Attempted Extortion - Low Enriched Uranium:</u> Provisions for safeguarding special nuclear material are contained in the Hope Creek security plan which will be fully implemented prior to bringing fuel onsite.
<u>80-08/Closed</u>	<u>BWR Technical Specification Inconsistency - RPS Response Time:</u> NRC Inspection Report 83-12 indicated this Circular was not issued to Hope Creek. However, the licensee clarified that a 50 millisecond RPS response time is used by GE for the RPS specification and by Bechtel in the Technical Specification and the safety analysis.

4. Safety-Related Pipe Support and Restraint Systems

The inspector observed work in progress involving attachment of pipe clamp lugs to ASME Class 1 pipe. The attachment welds' size and quality and the lugs' heat numbers, location, and shimming to pipe clamps were examined and found satisfactory. The inspector spoke with several pipe

fitters involved in welding the lugs to the pipes who questioned why the lugs were welded on all four sides to the pipe. The inspector did not know the answer to this question but did note that on other than Class 1 piping the lugs were welded to the piping on only three sides. This three-sided arrangement facilitates direct bearing of the pipe clamp against the lugs without the need to shim. Investigation into this question determined that Class 1 piping design for integral structural attachments utilizes ASME Code Case 1745, "Stress Indices for Integral Structural Attachments, Class 1 Section III, Division 1." The use of this Code Case facilitates ease of design but imposes certain limitations. In addition to requiring full penetration welds and fillet covers on all four sides, one of these limits requires that the attachment of the lug be made on straight pipe, with the nearest edge of the attachment weld located at minimum distance of \sqrt{rt} from any other weld or other discontinuity where 'r' is the mean pipe radius and 't' is the nominal pipe-wall thickness.

The inspector reviewed a sample of Class 1 piping in the drywell that contained welded lugs to determine if the above Code Case 1745 limit was being adhered to. This inspection disclosed that the lugs for hanger 1-P-AE-035-H06(Q) did not meet the \sqrt{rt} limits. The inspector questioned Bechtel Project Engineering as to what means were used to ensure that limits imposed by this Code Case were adhered to. Project Engineering responded by saying that all Class 1 pipe welds were being documented as-built, and this as-built information will be inputted into a final stress analysis computer program. They stated the computer program contained a verification loop that checked to ensure all Code Case limits were met. If limits are not met, the program produces an error statement that results in the use of a different stress analysis computer program. This alternate program does not utilize Code Case 1745. Based on Project Engineering's response, the inspector had no further questions.

5. Safety-Related Piping - Observation of Work and Work Activities

The inspector witnessed hydrostatic testing of portions of Service Water piping located in the Service Water Intake Structure. The design pressure of the piping was 15 psig and the hydrostatic test was accomplished in accordance with ASME III requirements as supplemented by applicable Bechtel procedures. The inspector verified that the valve lineup was correct, that a calibrated test gauge and relief valve was used, that the welds were dry prior to inspection (i.e., there was no condensation on the piping, and water used to fill and vent the system had been wiped from the piping prior to pressurization), that the relief valve could relieve the capacity of the test pump, and that sufficient and knowledgeable QC personnel were involved in the inspection activities.

Based on a review of the hydrostatic test boundaries and the system lineup to accomplish the test of the welds within those boundaries, the inspector determined that several field welds were not tested. The inspector asked the Bechtel Field Engineer why these welds were not tested and the engineer replied that ASME Code Case N-240 had been invoked and the welds in question fell within the exempted boundaries as defined by N-240. Because these welds were subject to pressure during the test, it did not make sense to exempt them from inspection and so the inspector reviewed the stipulations of N-240. This review indicated that N-240 may be invoked on piping whose only function is to transport fluids to and from spray ponds, lakes reservoirs, or tanks which are open to the atmosphere. The basic intention of N-240 is to grant relief from performing an impossible (one cannot pressurize a reservoir or lake) or impractical (e.g., filling a million gallon atmospheric storage tank to test two pipe welds between the tank and the first isolation valve) hydrostatic test. It is the intent of the ASME III Code that all welds be tested where practicable and that N-240 not be used indiscriminately.

The test in question involved pressurizing an atmospheric tank to hydrostatically test welds upstream of a check valve in a line off the tank bottom. Field welds made to connect the line to the tank and up to the tank side of the first isolation valve and other instrument line field welds were pressurized during the hydro but were not inspected because of Bechtel's interpretation of N-240. Discussions were held between the inspector, licensee, Bechtel and ANI personnel on this issue. Bechtel's position was that their interpretation of N-240 was correct but that if welds are pressurized they should be inspected. Because this position was not clear to Bechtel Field Engineering personnel responsible for hydro testing prior to the inspector raising the question, Bechtel Project Engineering issued a memo clarifying the application of N-240. This memo states:

Code Case 240 should be utilized only where it is impractical to perform the ASME required hydro test. Furthermore, whenever code case 240 is applied but the exempted piping is partially pressurized as part of a hydro test of another portion of the piping system, an observation of the leak tightness of the exempted welds should be made and noted as an attachment with the ASME hydro test report.

Based on discussions with NRC Region I technical personnel and the ANI regarding correct interpretation of N-240, the inspector is satisfied with the action taken to address his concern.

6. Containment Penetrations - Observation of Work Activities

The inspector observed work activities associated with installation of additional reactor vessel water level instrumentation. These activities included core drilling holes through the reinforced concrete containment shield wall and drilling 2" diameter holes in the drywell shell. The work was accomplished using detailed procedures and was closely monitored by Field Engineering, QC, and QA. Precautions were taken to prevent loose material created by the drilling operations from dropping into the drywell air gap between the drywell and the shield wall. No concerns resulted from this inspection.

7. Suppression Chamber - Preparation for Coating

The inspector observed sand blasting of the inside of the suppression chamber and other major components within. The sand blasting will prepare the metal surfaces for final coating. Inspection of the blasted surfaces is being performed to identify any potential surface defects. O.B. Cannon, Inc. is the subcontractor performing the blasting and coating. The inspector met the O. B. Cannon QA Director and discussed the quality aspects of this work activity and other historic problems with coatings at Hope Creek. This preliminary inspection did not identify any concerns.

8. Overall Preoperational Test Program - Turnover

The inspector performed an initial inspection of the turnover process. Turnovers are of two types - facility and component/system. The procedures controlling the turnover process were reviewed and a sample of each type of turnover package was compared to the procedural requirements. No discrepancies were identified. The final turnover packages at Hope Creek involve a substantial number of signatures and very little information. The basic contents of a package are the boundaries and the major components within these boundaries. The QC documentation associated with the construction of the facility or component/system is not part of the package. A series of QC signatures signifies that all of this documentation has been checked, verified satisfactory, and exists in the records storage vault.

This type of turnover involves a substantial amount of front end work by Bechtel QC to verify records but results in less review work for the licensee at the time of acceptance of the turnover. The inspector asked the licensee if an aggressive QA audit program existed to help assure the signatures on the turnover packages were meaningful. The licensee

stated that an audit plan was under development but was not yet functional. The inspector expressed his concern that the turnover package signatures require frequent auditing to determine that records stated to exist actually do exist and are complete and accurate. The QA audit plan was still in development at the end of this report period. Additional followup inspection will be performed in the turnover area.

9. Exit Interview

The inspector met with licensee and contractor personnel at periodic intervals during this inspection report period. At these times, the inspector summarized the scope and findings of his inspection activities.