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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-397/80-01

Docket No. 50-397 License No. CPPR-93 Safeguards Group

Licensee: Washington PUblic Power Supply System

P. O. Box 968

Richland, Washington 99352

Facility Name: Washington Nuclear Project No. 2 (WNP-2)

Inspection at: WNP-2 Site, Benton County, Washington

Inspection conducted: January 15-18, 1980

Inspectors: P.V. Bard for 2/22/80
D. P. Haist, Reactor Inspector Date Signed

J. O. Elin 2/26/80
J. O. Elin, Reactor Inspector Date Signed

Date Signed

Approved By: G Spencer for 2/26/80
R. T. Dodds, Chief, Reactor Engineering Support Section Date Signed

Summary:

Inspection on January 15-18, 1980 (Report No. 50-397/80-01)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of construction activities including: review of the licensee's responses to IE Bulletin 79-14; preservice inspection activities; safety related piping installation; electrical power, instrument and control cable pulling and termination; and licensee action on previous inspection findings.

The inspection involved 50 inspector-hours onsite by two NRC inspectors.

Results: Of the five areas inspected, one continuing item of noncompliance (inadequate closure of instrument sensing lines (paragraph 3.c of Details) and one unresolved item was identified concerning failure to properly control welding filler material (Paragraph 8.0 of Details).

DETAILS

1. Persons Contacted

a. Washington Public Power Supply System (WPPSS)

* W. C. Bibb, Project Manager
* G. I. Wells, Construction Manager
* R. Johnson, Project Quality Assurance Manager
* J. M. Steidl, Construction Quality Manager
* A. M. Sastry, Project Management Specialist
* J. D. Martin, Plant Manager, WNP-2
* A. N. Kagler, Design Supervisor
* W. H. Smith, General Superintendent
* K. D. Cowan, Project Engineering Manager
* G. K. Afflerbach, Deputy Project Manager, Startup

D. Welch, ISI Field Coordinator
T. Hozle, Engineer
J. Zimmerschied, Quality Assurance Engineer
B. Boyum, Engineer

b. Burns and Roe, Inc. (B&R)

* R. C. Root, Deputy Project Manager
* M. J. Parise, Special Projects Manager
* G. T. Harper, Jr. Technical Support Manager
* H. R. Tuthill, Assistant Quality Assurance Manager
* R. D. Carmichael, Quality Assurance Engineer

M. A. Lacey, Resident Project Engineer
D. Graziano, Lead Manager Engineer
J. Snyder, Sr. Engineer, Design Supervisor Mechanical
G. Englert, Group Supervisor, Mechanical
M. Berestein, Resident Project Engineer

c. Lambert-Macgill-Thomas (LMT) Inc.

M. King. Foreman
E. Wood, Level III Examiner

In addition, Level I and Level II nondestructive examination personnel were interviewed.

d. WSH/Boecon/Bovee and Crail/GERI (WBG)

L. Buckner, Quality Control Supervisor
J. Wilkinson, General Superintendent
B. Martin, Superintendent-Welding

e. General Electric I&SE

F. Paseka - QC Supervisor

*Denotes those present at exit interview on January 18, 1980.

2. Construction Status

On January 18, 1980 the licensee considered the construction of the WNP-2 project to be 80.5 percent complete.

3. Site Tour

Immediately upon arrival at the site, the inspectors toured the containment drywell area to verify that the licensee's stop work order on the sacrificial shield wall and installation of pipe whip restraints was in effect. No work in these areas was observed. Following the entrance interview the inspector conducted a detailed site tour to observe the control of work activities and to examine the general state of housekeeping. The following conditions were observed:

a. Access control in the area of the control rod drive modules has been discontinued. Extensive work activities in this area have resulted in dirt and debris including nuts, bolts, and structural steel shapes in and around the control rod drive modules.

b. The standby liquid control storage tank discharge nozzle was open; the end protection on standby liquid control valve V-1B was removed, exposing the valve internals; an adjacent stainless steel standby liquid control valve and four one-foot lengths of stainless steel piping were stored without dunnage on the floor; cable 1M7B-0403-C-DIV 1 was not properly supported as it exited a conduit and it's end was not taped or otherwise protected.

c. The reactor vessel level instrument B22-N026A on instrument rack H22-P004 was removed without capping or otherwise protecting the exposed instrument sensing lines on the instrument rack. This was cited previously as an item of noncompliance (IE Inspection Report 50-397/79-16). The inspector determined that startup personnel had removed the instrument for calibration and had not provided closure of the sensing lines while the instrument was removed. This failure to follow site procedures for protection of exposed instrument sensing lines is a continuing item of noncompliance.

The licensee produced documents showing that the housekeeping problem around the control rod drive modules had been identified by the WPPSS construction quality group on January 14, 1980. General Electric had been directed to correct the situation. The inspector reexamined the area on January 17, 1980 noting some improvement but structural steel debris remained in and around the modules, and the open ends of lines for control rod modules 138 and 141 immediately outside the containment wall were uncapped. The licensee committed to correct these conditions and increase surveillance in this area.

The licensee also committed to correct the conditions around the standby liquid control system.

4. Licensee Action on Previous Inspection Findings

(Closed) Followup Item (50-397/79-14/02) Weld Reject Rate.

The inspector reviewed the 215 contractor's program in the area of weld rejections. When last examined, weld reject rates had been reduced from over 33% to between 15% and 20%. A superintendent remains assigned to weld quality and weekly status reports are still being issued. The superintendent indicated that weld reject rates are currently between 6% and 17% on new work. The inspector reviewed status reports for the last six weeks and verified and stated progress in reducing weld reject rates. This item is considered closed.

(Open) Noncompliance (50-397/79-04/11) Battery Rack Installation

The licensee is evaluating the battery with respect to possible replacement with a new Exide model requiring a different mounting rack structure. There are numerous outstanding NCR's on the battery such as low specific gravities, overtorquing of intercell connections, and improper installation of supporting racks (Ref. IE Inspection Report 79-09). Additionally this model Exide battery is no longer available from the manufacturer. The cells of the new Exide design will not fit on the racks presently installed. The licensee intends to make a discharge capacity test of the battery and review the status of outstanding NCR's by March/April 1980 and determine then if replacement is necessary. This item remains open pending proper installation of replacement of the battery.

(Open) Followup Item (50-397/79-16/05). Possible Pipe Wall Thinning and Notch Effect.

Visual inspections of weld joints disclosed obvious reductions in pipe outside diameter at welds which had been prepared for inservice inspection. The licensee took wall thickness measurements in response to the inspector's concern on the inlet side of valve RRC-V-60B and the lower side of valve RHR-V-14B. Piping connecting to RRC-V-60B is specified as 24-inch diameter with a minimum wall thickness of 1.14 inches. The minimum wall thickness was located at approximately 135° and was 1.21 inches. Piping connected to RHR-V-14B is 18-inch diameter with a standard wall thickness of 0.375 inches. The minimum wall thickness was 0.710 inches. The inspector had no further questions on possible wall thinning.

Visual inspection of a pipe weldment-to-valve for the lower weld on valve RHR-V-14B had disclosed a sharp transition creating a possible stress riser. Visual examination of other pipe to fitting weldments during this inspection disclosed similar conditions at valves RHR-V-3A and RHR-V-68A and also at Class 3 main steam relief valve discharge piping to elbow welds MS-547-3 field weld 3 and MS-547-2

field weld 1. Field weld number 3 had been visually inspected and accepted on July 31, 1978 and liquid penetrant accepted on August 2, 1978. Field weld number 1 had been visually inspected and accepted on July 31, 1978 and liquid penetrant accepted on August 2, 1978, however a subsequent reinspection program on January 9, 1979 resulted in a surface defect rework record calling for a dditional filter material to eliminate the crevice. The 215 contractor examined field weld number 3 and felt that the notch condition was probably acceptable although it was the same condition existing on field weld number 1.

The licensee is issuing a corrective action request (CAR) to the 215 contractor outlining these conditions and requesting a program of corrective action. Work Procedure 57, revision 9, attachment number 1 specifies, in part, that for transition contours where piping butt joints involve different outside diameters..."the groove shall be filled to the full depth of the joint prep on the thicker section." The 215 contract QC inspectors have been inconsistent in interpreting the above requirements.

This item will remain open pending review of the 215 contractor's response to the licensee's CAR.

5. IE Bulletins

IE Bulletin 79-14 - Seismic Analysis for As-Built Safety-Related Piping Systems

NRC Region V received a response to IE Bulletin 79-14 on September 11, 1979. The response described, in general terms, the program utilized to ensure that the seismic analysis input information conforms to the as-built configuration of the plant, and indicated conformance with the intent of the bulletin. The licensee did not attempt the inspections required by the bulletin since the plant is under construction and at that time no safety-related systems had been completed and turned over to the licensee.

The inspector discussed the procedures used to insure that the elements required for seismic analysis are incorporated in the as-built drawings to the required accuracy. The inspector reviewed the licensee's as-built policy directions to B&R and Project Engineering Directive PED-215-1823 which revised the 215 contract specification to reflect additional as-built drawing requirements. The inspector reviewed the 215 Contractor's Project Directive Numbers PD-82, Rev. 0, "As-Built of Large and Small Base Piping Isometrics" and PD 75 Rev. 4, "Hanger Engineering Standards", and found that not all specification requirements are reflected in these procedures. B&R and WPPSS representatives stated that they have audited approximately 60 out of 180 hanger as-builts and have

found numerous problems. Typical problems include deficiencies or discrepancies in the bill of materials, discrepancies in member sizes, incorrect clearances, and hanger locations out of tolerance. B&R is now tabulating the problem areas and will resolve them with the 215 contractor. As a result, B&R has not accepted any as-built drawings. Licensee representatives feel that the problems will be resolved within 90 days.

The 215 and 216 contractor's procedures will be examined and NRC audits of as-built drawings will be performed during a subsequent inspection. (50-397/80-01/01).

6. Review of 10 CFR Part 21 Submission by General Electric Company Concerning Defective Pin Crimps in Panel H12-P853 Insert 72C at Susquehanna.

An inspection of panel mounted connectors at WPPSS Unit 2 was made by General Electric Company in October, 1979. A total of 107 connectors were examined of which one failed the pull test. Three pins in termination module TM-46, termination cabinet P679 failed. A visual examination indicated that the conductors had not been fully inserted into the barrel of the failed pins. This termination was replaced. The action taken was found to provide adequate assurance the connections will perform their intended function. The inspector has no further questions at this time.

7. Preservice Inspection

Observation of Work and Work Activities

The inspectors observed ultrasonic and liquid penetrant examination of the following pipe welds:

System and Weld No.	Examination
18 RHR-4-AL RHR Loop-A test line	Liquid penetrant (PT)
4 RCIC-13-10 4 RCIC-13-11 RCIC steam supply	45^{o} Ultrasonic (UT)

Calibration and examinations were performed by certified examiners in accordance with procedures UTP-10 (Ultrasonic) and PTP-1 (Liquid penetrant).

The inspector examined calibration block numbers UT-1, UT-14, UT-16 and UT-17 against the as-built drawings. The inspector found that the drawing for block UT-1 indicated a nominal wall thickness of 1.250 inches but the block was stamped with a wall thickness of 1.125 inches. The drawing reflected the actual nominal thickness. The licensee indicated that the block will be restamped. The licensee immediately examined all blocks against the as-built drawings finding minor discrepancies in the stamping and missing material grade on one block. The licensee stated that these discrepancies will be corrected immediately. Nominal wall thicknesses are stamped on the blocks for information. The range is determined from an IIW or rompas block prior to actual calibration on the blocks. For this reason, the inspector had no further concerns in this area.

The inspector examined the material certifications for ultrasonic calibration block numbers UT-1 and UT-2 and found the certifications in accordance with the as-built drawings and stamping on the blocks. Straight beam examinations were performed prior to fabrication to ensure the absence of laminations.

No items of noncompliance or deviations were identified.

8. Control of Welding Filler Material

During the observation of preservice examination activities at containment elevation 540, the inspector identified several pieces of welding electrode which were not properly controlled. During observation of control rod drive insert and withdrawal line installation activities at containment elevation 560, the inspector further identified six unused type 7018 coated electrodes. In both cases, the controlling NF-69 filler metal withdrawal forms, and portable rod ovens were not in the vicinity of the rod and the rod had not been bent to signify its rejection. These findings were identified to the licensee and are unresolved pending a review of the contractor's overall weld material control system. (50-397/80-01/02)

9. Electrical Cables and Terminations

a. Observation of Work and Work Activities.

The in process and completed work associated with 15 safety class 1E Power and control cables were observed. The installation of these cables was examined for compliance with construction procedure CP404 "cable pulling and inspection" and NRC requirements for safety class 1E cable placement. The completed work associated with two 4160 volt power cables was also examined.

No deviations or items of noncompliance were identified.

b. Review of Quality Records.

The audits of contractor 218 (Fishbach/Lord) performed by the licensee in October 1978 and May 1979 were reviewed. Several items of finding noted in the May 1979 audit had been closed by the licensee with minimal explanation of why the item was closed. Investigation into several of these findings revealed more justification for closing the item than had been documented. The licensee stated that he would review these findings to insure complete documentation of the audit followup.

The inspector examined 18 site quality assurance surveillance reports pertaining to some cable pulling activities performed during the preceding twelve months. The records were complete and indicated either satisfactory completion of safety related activities or unsatisfactory conditions were discussed and NCR documentation numbers noted.

No deviations or items of noncompliance were identified.

10. Exit Interview

An exit interview was conducted on January 18, 1980 and was attended by the representatives denoted in Paragraph 1. The activities covered during the inspection and observation and findings of the inspectors were discussed. The licensee committed to initiate a memorandum to GE and to increase surveillance of control rod drive piping to ensure that piping ends remain capped and free from contamination.