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

REGION V

Report No. 50-508/81-09
50-509/81-09

Docket No. 50-508 & 50-509 License No. CPPR-154 & 155 Safeguards Group

Licensee: Washington Public Power Supply System
P. O. Box 1223
Elma, Washington 98541

Facility Name: WNP-3 and WNP-5

Inspection at: WNP-3 and WNP-5 Site (Satsop)

Inspection conducted: May 12-15, 1981

Inspectors: R T Dodds
D. P. Haist, Reactor Inspector — 6/5/81 Date Signed

R T Dodds
J. O. Elin, Reactor Inspector — 6/5/81 Date Signed

Date Signed

Approved By: R T Dodds
R. T. Dodds, Chief, Reactor Projects Section 2
Reactor Construction Projects Branch — 6/5/81 Date Signed

Summary:

Inspection during the period of May 12-15, 1981 (Report Nos. 50-508/81-09 and 50-509/81-09).

Areas Inspected: Routine, unannounced inspection by regional-based inspectors of construction activities including quality assurance program and implementing procedures of the prime electrical contractor; in process and completed work on containment penetrations; licensee action on previous items of enforcement and inspection findings; and licensee action on a potentially reportable construction deficiency.

The inspection involved 56 inspection hours onsite by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

a. Washington Public Power Supply System (WPPSS)

*R. S. Leddick, Program Director
*J. C. Lockhart, Quality Assurance Manager
*O. E. Trapp, Project Engineering Manager
*J. Puzauskas, Quality Assurance Engineering Supervisor
*J. Vanni, Quality Assurance Engineer
*D. Kerlee, Quality Assurance Audits Supervisor
*C. H. Tewksbury, Quality Assurance Surveillance Supervisor
*D. H. Walker, Materials Management Specialist
*M. R. Harris, Quality Assurance Engineer
*R. G. Peck, Quality Assurance Engineer
D. Vance, Quality Assurance Engineer

b. Ebasco Services Inc. (Ebasco)

*A. M. Cutrona, Quality Assurance Manager
*L. A. Bast, Quality Assurance Engineering Supervisor
M. Harris, Quality Assurance Engineer
J. Kyle, Quality Assurance Engineer

c. Peter Kiewit Sons Inc. (PKS)

H. Barton, Quality Engineer
J. Rhodes, Superintendent
P. Smith, Quality Engineer

*Denotes those present at the NRC management meeting on May 15, 1981. The NRC Senior Resident Inspector also presented his findings at this meeting.

2. Site Tour

The inspectors and the Senior Resident Inspector conducted a tour of both units on May 12, 1981 to observe completed work and work in progress. The inspector observed a gouge approximately one-inch in diameter and one-half inch deep on a Unit 3 steam generator hold down bolt embed plate. The licensee investigated the gouge and concluded that it had inadvertently been made while cutting convenience steel in the area. A nonconformance report was initiated to identify and resolve this issue. The inspectors also observed that the Unit 3 auxiliary feedwater pump "B" motor space heater was not energized. The licensee took prompt action to correct this situation.

No items of noncompliance or deviations were identified.

3. Licensee Action on Previously Identified Followup and Unresolved Items

a. (Open) Followup Item (50-508/509/80-15-02) - Policy for Documenting and Voiding of Inspection Documents

The inspector verified that procedure no. POP-N-707 Rev. 3, "Site Inspection and Test" has been returned to the contractor, approved, subject to the comments that prenumbered inspection report forms be used and that all voided inspection reports be sent to the project records clerk for incorporation into the project files. The licensee has also committed to evaluate the policies of other site contractors with regard to voiding of quality assurance documents. This effort is still in the planning stages. The results of this effort will be examined during a subsequent inspection.

b. (Closed) Unresolved Item (50-508/509/81-01-02) J. A. Jones - Failure to Incorporate Specification and Standard Requirements Into Procedures

The inspector verified that procedure no. POP-N-711, Rev. 4, "Supplier Evaluation" now addresses the qualification requirements of evaluation team personnel, requires that the basis for supplier acceptance be stated, considers the vendor's past performance, and deletes reference to conditional acceptance.

This item is closed.

c. (Closed) Unresolved Item (50-508/509/80-15-03) - Procedure Approved for Use with Unresolved Engineer Comment

J. A. Jones procedure no. POP-N-706, "Source Inspection" had been approved for use with an unresolved comment by the Engineer concerning the characteristics to be inspected and the method of surveillance to be used.

The inspector verified that procedure no. POP-N-706, Rev. 2 now requires the assigned inspector to become familiar with the status of items or materials requirements of purchase order specifications and applicable inspection procedures and instructions. A nonconformance report is to be issued for items not in compliance with these requirements.

This item is closed.

d. (Closed) Followup Item (50-508/509/80-10/01) - Review of Procedures, Fischbach-Moore

The inspector examined the following Fischbach-Moore Quality Assurance and Quality Control implementing procedures to ascertain whether quality assurance plans, instructions, and procedures for specific safety related activities have been established and whether these documents conform to PSAR commitments, ANSI standards and contract specifications:

Procedure No.	Title
QAP-101 S3	Qualification and Certification of Personnel
C/QCP-301 S3	Material Control/Receiving, Storage and Issuance
C/QCP-302 S3	Electrical Material and Equipment, Storage and Control
C/QCP-303 S3	Material Control, Handling and Transporting
QAP-301 S3	Receiving Inspection, General
C/QCP-306 S3	Housekeeping
C/QCP-304 S3	Procedure for Traceability of Cable Tray
C/QCP-305 S3	Procedure for Traceability of Class 1 Suppor Structural Steel
C/QCP-506 S3	Cable Termination and Splices
C/QCP-504 S3	Installation of Cable Tray (seismic and non seismic)

These procedures appeared to adequately address specification and standards requirements.

This item is closed.

4. Licensee Action on Previous Erforcement Items

(Closed) Noncompliance (50-508/509/80-10-02) - Inadequate Final Location Storage of Reciprocating Charging Pumps by Peter Kiewit Sons' Company

The licensee's response to this item of noncompliance was submitted by letters no. G03-80-2965 dated November 21, 1980 and no. G03-81-746 dated March 13, 1981.

The inspector examined the licensee's corrective actions and observed that the corrective actions were as stated. The corrective actions appeared satisfactory to insure pump and motor storage within the requirements of ANSI N 45.2.2.

5. Licensee Action on Potential 10 CFR 50.55(e) Reportable Construction Deficiency

The inspector examined the licensee's action regarding hydrogen embrittlement of 3/4-inch helical lock washers, reported as a potential 50.55(e) item on March 17, 1981. The licensee has determined this deficiency to be not reportable under the provisions of 10 CFR 50.55(e) because the subject lock washers are not intended for use, nor have any been installed in seismic applications. The licensee has taken appropriate action to quarantine the defective lock washers and determine the failure mechanism. The lock washers were supplied by the Ray Briston Company, Inc. of Portland, Oregon. Metallographic examination of the lock washers which fractured in-service disclosed that they were embrittled and contained severe intergranular and transgranular cracks. The probable cause of the cracking is hydrogen embrittlement occurring during the pickling stages of the electrozinc plating process. Mechanically zinc-coated washers showed no evidence of an embrittled structure or incipient cracks. The licensee intends to submit a report to the NRC Region V office on this issue for information purposes.

This issue is considered closed.

6. Electrical Components and Systems - Review of Quality Assurance Implementing Procedures - Fischbach-Moore

The inspector examined the following procedures based on Ebasco contract specification WPPSS-3240-467, "Drilled-In Expansion Type Anchors in Concrete."

Fischbach and Moore - C/QCP-501 S3, Installation of Expansion Type "Drilled-In" Concrete Anchors.

Morrison Knudson - CP-21, Hilti Quality Class I and II Anchoring Devices.

J. A. Jones - WE-WP-12, Drilled-In Expansion Type Anchors.

The inspector found that the Fischbach and Moore and the J. A. Jones procedures were lacking perpendicularity or angularity specification and inspection requirements contrary to the contract specification. The Morrison Knudson procedure required spacing of bolts per the manufacturer's recommendations rather than by the more conservative criteria of the contract specification.

The inspector also found that the Ebasco specification did not state spacing requirements of anchor bolts from abandoned bolt holes, concrete embedments and other protrusions. The Ebasco specification did not clearly state the quality control inspections required in accomplishing this activity.

The licensee stated that the contract specification (WPPSS-3240-467) would be reviewed and that necessary changes would be made in this document and applicable contractor specifications. This is a follow up item to be examined further during a future inspection (50-508/509/81-09-01).

7. Containment Penetrations

a. Review of Quality Assurance Implementing Procedures - PKS

The inspector examined the following procedures and drawings which govern the purchase, handling and installation of containment mechanical penetrations for conformance to PSAR, ASME B&PV Code and ANSI standard requirements:

Specification No. 3240-54 - Technical Specifications-Containment Mechanical Penetrations.

PKS Procedure No. WI-D-135 Rev. 2 - Care Maintenance Instruction Reactor Building Piping Penetration Assembly

PKS Procedure No. WI-306-Rev. 3 - Reactor Building Penetrations

Ebasco Drawing No. 3240 G-1300 - Reactor Building Piping Penetrations

PKS Drawing No. PKS-SK-251-45 - Containment Penetration No. 23 Reactor Building

Procedure No. PKS-WI-306, Rev. 3, paragraph 6.13 specifies pneumatic testing of process piping for penetration nos. 23, 24 and 44 in accordance with procedure PKS-EP-6. Procedure PKS-EP-6, Rev. 3 "Test Preparation Procedure for Piping and Components" paragraph 5.3 and the applicable ASME Code, Subsection NC G112 allow a pneumatic test in lieu of a hydrostatic test only when (1) the components are so designed and supported that they cannot be safely filled with water or (2) when components which are not readily dried are to be used in services where traces of the testing medium cannot be tolerated. Procedure PKS-EP-6 further specifies, in paragraph 5.15(b) that during a pneumatic test, joints shall be examined for leakage by soap bubble solution or equivalent. It appears that the exterior of the process pipe will be inaccessible for this examination following completion of penetration welding. The exterior of the penetration guard pipe welds will also be inaccessible after concrete is placed around the penetrations. Procedure PKS-WI-306 does not specify that these examinations must be performed prior to operations which will render the surfaces inaccessible for examination. The licensee is investigating these issues and they will be examined during a subsequent inspection. this is a followup item (50-508/509/81-09-02).

b. Review of Weld Procedure Specification and Quality Assurance Procedures

The inspector examined the following weld procedure specifications and supporting procedure qualification records for compliance with PSAR, specification and ASME B&PV Code requirements:

Weld Procedure Specification-WPS-25, Rev. 4 - GTAW-SMAW P8 to P8
Procedure Qualification Record No. 1, Rev. 2
Procedure Qualification Record No. 2, Rev. 2
Weld Procedure Specification-WPS-95, Rev. 3 - GTAW-SMAW P8 to P8
Procedure Qualification Record No. 2, Rev. 2
Procedure Qualification Record No. 9, Rev. 1

No items of noncompliance were identified.

c. Observation of Work and Work Activities

The inspector examined work activities associated with containment penetration nos. 23 and 24 for conformance with contractor procedures, the PSAR and the ASME B&PV Code. Activities examined included storage and maintenance of penetration assemblies at final location, cleanliness of internal surfaces, rigging and handling of partially completed penetrations, completeness of work release package and indication of status of completed activities, control of weld filler material, and liquid penetrant examination of a weld repair excavation.

Penetrations were protected from overhead damage in accordance with contractor procedures. The inspector identified excessive amounts of grinding debris on the interior surfaces of the bellows expansion joints in both penetrations. This condition was promptly corrected. The inspector examined the extent of planning and knowledge of quality control inspectors and construction superintendent of the sequence of operations on this relatively complex activity. The contractor appeared to be adequately prepared for this activity with the exception of the procedure questions discussed in paragraph 7a. above.

The inspector identified a revised work release in the construction copy of the penetration no. 23 work package dated March 25, 1981 with assigned sketch no. PKS-SK-251-45. This revised work release was issued to transmit RFI-1581-FP, Rev. 0 but contained no work release number or revision number as required by contractor procedure nos. PKS-EP-13, Rev. 7, "Work Release Preparation" and PKS-EP-1 Rev. 14 "Document Control". The quality engineer's copy of the work release package did not contain a copy of this unnumbered work release which transmitted RFI-1581-FP, Rev. 0. The circumstances and implications of this unnumbered work release will be examined during a subsequent inspection. This item is considered unresolved (50-508/81-09-03).

d. Visual Examination of Welds

The inspector visually examined the following shop and field welds on penetration nos. 23 and 24 for compliance with the ASME B&PV Code, contractor procedures and the PSAR. Attributes examined included weld location, length, size and shape, weld surface finish and appearance, weld reinforcement, finish grinding, and absence of surface defects.

Penetration	Weld No.	Type
24	Interior-flued head to sleeve	shop
24	Interior-process pipe to flange	shop
24	20	field
24	21	field
24	23	field (fillet)
24	22	field
24	Exterior-flued head to process pipe	shop
23	Interior-flued head to sleeve	shop
23	21	field
23	23	field (fillet)

The inspector observed two apparent linear indications at the root of field weld no. 21 on penetration no. 23. One indication was less than 1/4-inch long and one indication was slightly greater than 1/4-inch long. This weld had been visually examined by a contractor quality engineer and had been accepted. Contractor procedure no. PKS-QP-15, Rev. 2, "Visual Weld Examination," paragraph 7.3 (B) specifies, for ASME Section III, class 3 welds, an acceptance criteria of "No visible cracks on external surfaces, or internal surfaces when readily accessible". Further examination of the indications by liquid penetrant indicated that the indications were not cracks and were acceptable. This was confirmed by an examination of the radiograph of the weld.

No items of noncompliance were identified.

8. Unresolved Items

Unresolved items are matters about which more information is required to ascertain whether they are acceptable items, items of noncompliance or deviations. An unresolved item disclosed during the inspection is discussed in paragraph 7c.

9. Management Meeting

The inspectors met with the licensee and engineering management personnel denoted in paragraph 1 at the conclusion of the inspection on May 15, 1981. The inspectors discussed the scope and findings of the inspection. The licensee acknowledged the findings and committed to review the containment penetration installation planning and procedures to ensure that the proper leak tests are performed at the proper time.