

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-508/82-05
50-509/82-02

Docket No. 50-508/509 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: Construction Site

Inspection conducted: February 1-28, 1982

Inspectors: *W. G. Albert, Jr.* *3/31/82*
W. G. Albert, Sr. Resident Inspector Date Signed

Date Signed

Date Signed

Approved By: *R. T. Dodds* *4/1/82*
R. T. Dodds, Chief Date Signed
Reactor Projects Section 2

Summary:

Inspection during the period of February 1-28, 1982 (Report Nos. 50-508/82-05 and 50-509/82-02)

Areas Inspected: Routine unannounced inspection by the resident inspector of construction activities. Principal areas inspected included: (1) open items related to control of weld filler materials and structural steel connections; (2) welding of reactor coolant pressure boundary piping and associated documentation; (3) storage of safety-related equipment; and (4) lay-up of Unit 5 for extended construction delay. The inspection involved 58 man-hours of on-site inspection time by one NRC inspector.

Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

The inspector interviewed various engineering, management, inspection and construction personnel of the organizations listed below. Key personnel, including those who attended the exit interview, are specifically identified below:

a. Washington Public Power Supply System (Licensee or Supply System)

R. S. Leddick, Program Director, WNP-3/5
J. A. Puzauskas, Quality Assurance Engineering Supervisor
*O. E. Trapp, Project Quality Assurance Manager
N. F. Blaise, Senior Project Quality Engineer
D. R. Coody, Project Quality Engineer
*N. C. Kaufman, Project Start Up Manager
*E. L. Stephens, Senior Project Quality Engineer
J. A. Vanni, Senior Project Quality Engineer
J. M. Walker, Senior Quality Assurance Engineer

b. Ebasco Services, Inc. (Ebasco)

L. A. Bast, Quality Assurance Engineering Supervisor
*A. M. Cutrona, Quality Program Site Manager
G. E. Ellis, Civil Design Engineer (ESSE)
M. R. Harris, Project Quality Engineer
J. W. Hassett, Project Quality Engineer
*R. G. Peck, Project Quality Engineer

c. Combustion Engineering (CE)

W. G. Douglass
W. Pratt

d. Morrison - Knudsen (M-K or 263 Contractor)

D. G. Summers, Project Quality Manager
R. Polley, Lead Quality Control Inspector

e. Morrison - Knudsen/ESI/Lord - Joint Venture (Joint Venture)

T. Baumgartner, Quality Assurance Audits Supervisor
W. Holcombe, Project Quality Assurance Manager
R. Lawrence, Project Director
L. Murray, Welding Superintendent
J. Seifret, Quality Assurance Engineer
J. Sowers, Project Quality Director
R. Tucker, Discipline Engineer

*Designates those attending exit interview held on March 1, 1982.

2. Project Status

During this report period, construction progressed by 2.1 percent bringing total site construction to 47 percent completion.

Welding of the hot legs for the primary loop was completed to the outer surface, with back welding, cladding and post weld heat treatment still to be completed on these four welds. These are the largest safety-related pipe welds on the project.

Setting of equipment in the control room has started. Permanent lighting in a significant portion of that area has been energized.

The licensee has revised his schedule for the FSAR submittal and now expects to tender the application for an operating license on June 1, 1982.

3. Independent Inspection - Unit 3

Daily tours of some portion of the Unit 3 construction site were conducted by the NRC resident inspector during each on-site work day.

Construction housekeeping has shown noticeable improvement although problems with control of water and debris from concrete placement work continue in some areas. Cleanliness control zones established by the Joint Venture contractor for control of areas around the primary coolant loop (Zone IV) appeared to be functioning satisfactorily. However, the contractor had also established higher rated cleanliness controls (Zone III) for interior work in the reactor vessel, pump valves, steam generators and primary loop piping. The licensee's Quality Assurance surveillance group had found during the month that these zones were not being adequately controlled in accordance with the Joint Venture Procedure No. FCP 1054, "Establishment and Maintenance of Clean Room Areas". This resulted in a stop work order by the licensee until corrective action was initiated.

Corrective action was examined during tours of the areas in addition to examining licensee actions. From interviews and observations it appeared that corrective action was slow. The inspector will examine the licensee's corrective action further during future inspections.

No items of noncompliance were identified.

4. Action on 10 CFR 50/55(e) Construction Deficiencies

a. Morrison - Knudsen Structural Steel Bolting Problem
(Units 3 and 5)

In January 1981 the NRC was notified by the Licensee of a potential 10 CFR 50.55(e) condition regarding the erection of structural steel and the associated Quality Control documentation. The Licensee forwarded the first portion of his final report on November 17, 1981. This initial portion of the final report addressed the re-inspection program for Unit 5. (See IE Inspection Report 50-508/81-19.)

On January 29, 1982, the remaining part of the final report dealing with Unit 3 was submitted. This last portion of the final report also addressed an additional bolting problem in which two bolts were found to have been loosened after they had been tightened and received final inspection. Evidence showed that this may have been a deliberate act on the part of an unknown individual(s) who sought to embarrass the Quality Control inspector responsible for the correction. The licensee concluded that this additional deficiency would not adversely affect the safe operation of the plant and was not, in itself, reportable under 10 CFR 50.55(e).

Regarding the verification of inspection in Unit 3 and the reinspection program for Unit 5, the NRC resident inspector accepted the licensee's conclusions that these actions addressed problems which could adversely affect safe operation of the plant. However, the NRC resident inspector found that much of the data on which this conclusion was based represented an extremely conservative approach to evaluating the seriousness of the problem. In particular, it was found that any bolt reinspected with a torque wrench and which turned under the applied inspection torque, was classified as "loose". However, the applied inspection torque was based on bolt tensions which approximated the installation tension rather than the lower values of minimum required tension specified by Table 3, Paragraph 5(a) of the governing AISC Specification. Thus many bolts classified as "loose" in the report were not loose in actual fact. There was no determination recorded with regard to this and a "loose bolt" could be anything from a finger tight connection up to one which approached the job installation torque. The individual directly

responsible for much of the Unit 5 inspection work stated that a "high percentage" of the "loose" bolts were in a category which turned at or near the applied job inspection torque.

The high values for job inspection torques originally used for reinspection were found to have been derived by determining the torque required to duplicate the strain induced by installation rather than the torque required to produce the stress required by AISC for minimum tension. Thus the job inspection torque was significantly higher than that required to produce minimum AISC tension values. Since this torque was essentially the same as the torque required for installation by "turn-of-the-nut" method, a large percentage of the bolts re-inspected might be expected to turn on application of such inspection torque and thus be classified as "loose".

Such higher torque values were used for reinspection of Unit 5 bolting during the first full month of reinspection work by three or four inspectors. Later, somewhat lower standard values were used and, still later, the job inspection torque was determined in accordance with AISC specification. The AISC "Specification for Structural Joints Using ASTM A-325 and A-490 Bolts" shows that the error was on the conservative side, and although unlikely, it is possible that the use of an inspection torque based on installation values, could have been intended as a very conservative approach to reinspection.

The above observations may lend credence to the licensee's contention of acceptability of inaccessible joints; however, the Regional NRC office questions the assumptions, treatment of data, and conclusions in the statistical analysis used to support the 50.55(e) reports. Therefore, this item remains open pending resolution of these concerns.

5. Action on Previously Unresolved Items or Items Noncompliance

a. (Closed) Item of Noncompliance (50-508/509/80-13-01)
M-K Failure to Assure that Bolted Assemblies Meet Specification Requirements

In the initial finding, the NRC cited an instance of loose bolts in a structural beam which had been inspected and accepted. In response, the licensee stated that the questionable joint had been loosened to facilitate installation of other structural steel. Corrective action included procedure changes, training, a reinspection program for Unit 5

and verification of the original inspection for Unit 3.
(See IE report 50-508/509/81-19 and paragraph 4a above.)

The issuance of a final 50.55(e) report on Unit 3 bolting, completes the licensee's commitment with regard to this problem.

Another question regarding a discrepancy between the date of full compliance stated in a 1981 response of the licensee and the date of actual compliance observed by the NRC resident inspector has been addressed separately in an NRC investigation.

b. (Closed) Noncompliance (50-508/81-19-01) Inadequate Implementation of Weld Electrode Control Procedure

IE Report No. 50-508/81-19 listed seven specific items which the resident inspector had found to be deviations from the Joint Venture procedure for the control of weld filler metal (FWP-500N). Practices in the west wire room were reexamined during this report period to insure adequate corrective action as outlined in the licensee's letter of February 12, 1982.

The weld rod issue room in the west wire room has been reconstructed as a separate, controlled facility from the previous facility of a combined tool room and weld rod issue room. The new arrangement still permitted one attendant for both rooms but permitted separate and lockable weld material control. Regarding the specific deviations from procedure cited in the NRC "Notice of Violation", the following was observed:

- .. Item 1. The use of a three part form as required by procedure sectional 7.3.1 was verified.
- .. Item 2. Up-dated access authorizations were found to be posted. Lists for both access and withdrawal authorizations were found to conform to the revised practice of reissuance once each month with annotations by the authorizing manager during the month when necessary.
- .. Item 3. Bare wire was found to be packaged and stored in dry locations.
- .. Item 4. All bare wire was individually shelved by type with appropriate self identification.

- .. Item 5. The contractor now utilizes a system which identifies filler metal within the oven slot by a map on the oven door. A check of three ovens showed that coated electrodes were stored as indicated by the maps.
- .. Item 6. The practice of using one form for two different issues of weld rod has been discontinued.
- .. Item 7. The inspector found that this relatively minor item had been misinterpreted as a concern that caps were not properly fitted instead of the actual concern that the container was issued without a cap. The matter was explained to contractor personnel. Bare rod containers on the shop floor are now being capped.

(Note: Item numbers correspond to those used by the licensee in his reply of February 12, 1982.)

The report on a Joint Venture audit of welding material control (MKP-003) was examined. The records of training discussed in the licensee's reply were examined. It was determined that the necessary corrective action had been taken in regard to this violation. This item is closed.

c. (Open) Unresolved Item (50-508/82-02-01)-MK/ESI/Lord-
Control of Nonconformance Condition - Procedure FQP 15.1

Further inspection of this concern involved an examination of the use of "white tags" which define permissible and prohibited work following the issue of an NCR or CER by the Joint Venture under their procedure FQP 15.1. This examination disclosed that Joint Venture personnel were not always cognizant of how "white tags" originate, how and when they are removed, and their relationship to the conditional release portion of the procedure.

The matter has been reviewed with the licensee and a commitment made that the Joint Venture will conduct training in the use of their NCR system down to the foreman level. This training is to be completed by March 17, 1982.

This item remains unresolved.

6. Safety-Related Equipment

Storage of the four low pressure safety injection tanks was examined against the care and maintenance instruction, CMI-021 Rev. 0. The instruction in turn was examined against the requirements of CEND-353 and found to be in conformance.

No items of noncompliance were identified.

7. Extended Construction Delay - WNP 5

A tour of the Unit 5 reactor auxiliary building (RAB) did not disclose any discrepant conditions. By the end of the report period, the Unit 5 RAB was fully secured by locked doors controlled by the site security organization.

The condition of the major items of primary system equipment, reactor vessel, closure head, steam generators and pressurizer were examined and the documentation reviewed. It was found that certain exceptions to storage conditions had been taken by the site Combustion Engineering (CE) organization. The conditions noted by CE were also examined by the NRC resident inspector and were discussed at a weekly meeting with the licensee. Of particular interest was a damaged "spray shield" in the Unit 5 closure head which prevented drying action by the desiccant located in the area above the shield. The condition was corrected by the end of the report period.

No items of noncompliance were identified by the NRC inspector.

8. Welding of Reactor Coolant Pressure Boundary and Other Safety-Related Piping

Routine observations of welding activities in the field were made on several occasions during the month. The welding activities examined included the piping being field fabricated for the containment spray system in the dome of the reactor building and the fit-up and initial welding of cold leg welds 211 and 212 between the south steam generator and south west pump volute. Weld procedures P-8-100-1 and P-8-101-1 of the Joint Venture were examined. Observation included three spot checks of welder qualification against published lists and three checks of weld material withdrawal authorizations.

No items of noncompliance were identified.

9. Licensee Investigation

The ongoing investigation by the licensee into the circumstances surrounding the employment of an individual who possessed an apparently falsified AWS QC-I certification was examined. Data on previous employment at other NRC licensed facilities was forwarded to cognizant officials at those sites.

10. 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 5c.

11. Exit Interview

On March 1, 1982, the NRC inspector met with the acting WNP 3/5 Program Director and other members of his staff. The items of this report were either summarized or referenced to the weekly discussions. The Licensee had no specific questions or comments.