

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

REGION V

Report No. 50-508/83-05  
Docket No. 50-508 License No. CPPR-154 Safeguards Group \_\_\_\_\_

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

Facility Name: WNP-3

Inspection at: Construction Site, Satsop, Washington

Inspection conducted: March 28 - April 27, 1983

Inspectors: *W. G. Albert, Jr.* 5/4/83  
W. G. Albert, Senior Resident Inspector Date Signed

Date Signed

Date Signed

Approved by: *R. T. Dodds* 5/4/83  
R. T. Dodds, Chief, Reactor Projects Section No. 1 Date Signed  
Reactor Projects Branch No. 1

Date Signed

SUMMARY: Inspection during the period of March 28 - April 27, 1983  
(Report No. 50-508/83-05)

Areas Inspected: Routine unannounced inspection by the resident inspector of construction activities, including the examination of welding for safety-related pipe supports and restraints, the examination of records for reactor coolant pressure boundary welding, installation of core internals, electrical cable termination, erection of the shield building dome and miscellaneous open items. The inspection involved 104 hours 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 identified below:

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

- \*R. S. Leddick, Program Manager, WNP-3/5
- D. E. Dobson, Project Manager, WNP-3/5
- N. F. Blais, Senior Project Quality Engineer
- \*C. M. Butros, Project Mechanical Engineer
- \*D. R. Coody, Project Quality Engineer
- D. S. Feldman, Operations Quality Assurance Engineer
- N. C. Kaufman, Startup Manager
- D. A. Kerlee, Quality Assurance Supervisor
- D. C. Koski, Project Civil Engineer
- R. D. Madden, Lead Quality Assurance Engineer
- M. L. McCormick-Barger, Nuclear Systems Engineer
- G. L. Moore, Project Electrical Engineer
- \*J. A. Puzauskas, Quality Assurance Engineering Supervisor
- E. Stauffer, Startup Quality Assurance Engineer
- E. L. Stephens, Senior Project Quality Engineer
- C. H. Tewksbury, Quality Surveillance Supervisor
- \*O. E. Trapp, Project Quality Assurance Manager
- J. A. Vanni, Project Quality Engineer
- J. E. Werle, Project Engineering Manager

#### b. Ebasco Services, Inc. (Ebasco)

- J. M. Albaugh, Supervisor Vendor Quality Assurance
- L. A. Bast, Quality Assurance Engineering Supervisor
- A. M. Cutrona, Quality Assurance Manager
- \*W. K. Drinkard, Quality Assurance Engineer
- P. J. Massman, Quality Assurance Engineer
- D. Mooney, Records Supervisor
- D. E. Patterson, Lead Records Clerk
- R. A. Putnam, Quality Documentation Clerk

c. Combustion Engineering (CE)

R. E. Claar, Quality Assurance Representative, CE Avery  
W. B. Douglass, Nuclear Site Manager  
A. Friend, Field Engineer  
R. Hicks, Quality Assurance Engineer  
L. Lehman, Quality Assurance Site Representative  
W. Pratt, Site Representative  
E. Shenk, Installation Manager  
A. Tuzes, Project Manager (Corporate)

d. Morrison-Knudsen (MK)

R. Jurbala, Quality Control Supervisor  
D. Summers, Quality Assurance/Quality Control Manager

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

J. Guyette, Records Review Engineer  
W. Holcombe, Project Quality Assurance Manager  
J. Hasset, Project Quality Assurance Manager  
E. Kuhn, Quality Assurance Records Supervisor  
L. Murray, Welding Superintendent  
J. Sowers, Project Quality Director

f. State of Washington Department of Labor & Industries

R. Barkdoll, Deputy Boiler Inspector  
C. Renaud, State Electrical Inspector II

\* Denotes those in attendance at exit interview on April 21, 1983.

2. Independent Inspection and Tours

Daily tours of some portions of the Unit 3 construction site were normally conducted by the resident inspector during each on-site work day of the inspection period.

No items of noncompliance were identified.

3. Project Construction Status - Unit 3

At the end of the report period, project site construction had reached 74 percent completion. Construction forces have been placed on a four-day week starting in March 1983 in order to extend available project funding.

Civil work was slowed because of a contract disruption between the Supply System and the batch plant operator. Work on the dry cooling tower has been halted as a result. Work has been resumed on the dome for the reactor shield building which does not require concrete for placement at this time.

4. Action on Previously Unresolved, Follow-up and Enforcement Items

a. (Closed Previously) Unresolved Item (50-508/82-26-01) - Cleanliness and Access Controls for Core Internals Work.

During this inspection period, the resident inspector performed a follow-up inspection of access and cleanliness controls for core internals work. This had also been addressed by Region-based inspectors (see 50-508/83-03). Access was being positively controlled by plant security forces with total accountability for all articles entering and leaving the reactor pit area. The written security control procedures were examined and found adequate.

Also, it was observed that all reactor pit areas had been combined into a single controlled zone which simplified housekeeping and entry controls. This item remains closed.

b. (Closed) Follow-up Item (50-508/83-03/02) - Linear Indication in Flow Baffle Assembly.

This item arose when a Region-based inspector observed a linear indication in the Flow Baffle Assembly while it was under installation in the reactor vessel. The assembly had been shipped under a certificate of conformance and the Region inspector had been informed that dye penetrant examinations had been performed in the shop.

Follow-up examination by the resident inspector revealed that:

- The assembly in question is not considered safety-related.
- The drawings do not require penetrant examinations in the area questioned.

- The questionable area was ground out and repaired by CE. The grindout and penetrant examination of the excavated area was witnessed by the NRC resident inspector.

5. Installation of Core Internals.

Work on core internal installation is expected to be completed in June 1983. The NRC routine inspection module is being followed. An examination was made of the circumstances which caused the issuance of a stop work order by Ebasco to CE because of an Ebasco Quality Assurance system audit.

The resident inspector also examined a problem with CE shop welding on the core support structure. This problem was originally identified at another System 80 site. The concern is unique to CE System 80 designs and appears to involve a failure to back grind a weldment in a manner which would establish the structural integrity of the weld. The Licensee is evaluating the reportability of the matter in accordance with 10 CFR 50.55(e).

No items of noncompliance were identified.

6. Installation of Main Steam and Feedwater Restraints.

During the report period, welding and bolting of these structures was examined in the field. No items of noncompliance were identified.

7. Records for Reactor Coolant Pressure Boundary Welds.

The review of these records was continued with all questions of the NRC inspector being resolved. Among the questions addressed was the cause of different dates between some of the hold point signoffs shown on Weld Braze Data Cards (WBDCs) and the dates shown on the inspection reports supporting the hold point signoff. It was found that a change in quality control systems had required some inspectors to write reports from field notes some time after the actual inspections were performed. Later, the system was again revised to delete the reporting requirement, but in the interim it resulted in some inspection reports having dates that were different from the WBDC signoffs. Interviews and examinations by the NRC resident inspector did not reveal any attempt to falsify data or to indicate that inspections had been performed which had not in fact been performed.

The changed system (present system) does not affect reporting for NDE work, nor does it obviate the need for written reporting when work is found incomplete or otherwise nonconforming.

No items of noncompliance were found.

## 8. Structures.

- a. Reinforcing steel for pourbacks was examined. The inspector found that craft and inspection personnel were not rigorously adhering to the requirements of M-K procedure CP-06 for the inscribing of centering marks on the rebar steel prior to cadwelding. The practice found by the NRC was that individuals were using their own measurement systems instead of the procedure-specified scribe distances. Immediate corrective action was taken. No evidence of improperly placed cadweld sleeves was found and the centering marks being used did appear to serve as a control. No items of noncompliance were found.
- b. Bending of reinforcing steel utilizing a bender specifically designed to be used on steel dowels in the field was examined. The qualification of the benders (one for No. 8 size bars and one for No. 11 size bars) by bench test was observed. The initial field use of the bender on No. 8 bars was also examined. No problems or items of noncompliance were observed.

Figures 1 through 4 show the test and field use of these devices.

- c. Guide shims for controlling the shift in the formwork dome were examined. No items of noncompliance were identified.

## 9. Electrical Cable Installation.

Pulling and terminating of electrical cable were observed on several occasions during the month.

The inspector questioned the methods observed for supporting cables as they enter the bottom of the cabinets and control boards. Reliance on cable ties for vertical supports did not appear to be a sound practice in certain instances. The Licensee has stated that the concern of the NRC resident inspector is being referred to the architect-engineering design offices for review and analysis. The matter will be followed up during future inspections. This item is identified as Follow-Up Item No. 50-508/83-05/01, "Cable Bundle Supports."

Figure 5 shows an example of the inspector's concern about bundle support. Figures 6 and 7 are general views of the cable termination process which utilizes computer generated termination cards and heat shrink identification tags.

An examination of all 51 cables currently installed at Node Green 102 were found to be properly marked, tied down and free of jacket damage within the sampled distance of approximately 4 feet.

No items of noncompliance were identified.

10. Electrical Cable Procurement.

Manufacturing problems with the quality of cable jackets were examined with the Licensee and Ebasco. NRC Region IV has been apprised of these problems so that action may be taken as they deem appropriate. However, the actions of the Licensee and Ebasco appear to be providing adequate controls for cable being accepted for installation at WNP-3.

11. Core Internals Records.

Item 4b above is closed, but the examination of the records raised a question concerning the manner in which Ebasco (and eventually the Licensee) could assure themselves that complete data packages were available for components delivered by CE. The question arose since many components are sent by CE to Ebasco and then returned to CE for installation. Any documentation deficiency on arrival is eliminated by this return.

This question is being addressed by the Licensee, who will advise the NRC regarding any action found necessary to provide the necessary assurance.

This will be identified as a follow-up item, "Completion of CE Documentation Package," No. 50-508/83-05/02.

12. Miscellaneous Items.

- a. LER 82-074/034-1 at Beaver Valley was found to be not applicable to WNP-3 since the same brand of check valves are not used in the charging pump outlet lines.
- b. Figure 8 shows protection provided for the half round pipes of the Ground Water Drainage System after NRC inspectors noted problems with dirt entering this system from non-safety-related work.

13. Exit Interview.

On April 21, 1983, the material in this report was discussed with Supply System and Ebasco personnel as indicated in paragraph 1 above. In addition, weekly meetings are routinely held with the Quality Assurance Manager of the Supply System.

Any items of significance in the four remaining days of the report period following the exit interview were covered by a region-based inspector who held an exit interview on April 28, 1983. (Reference: NRC Inspection Report 50-508/83-04.)

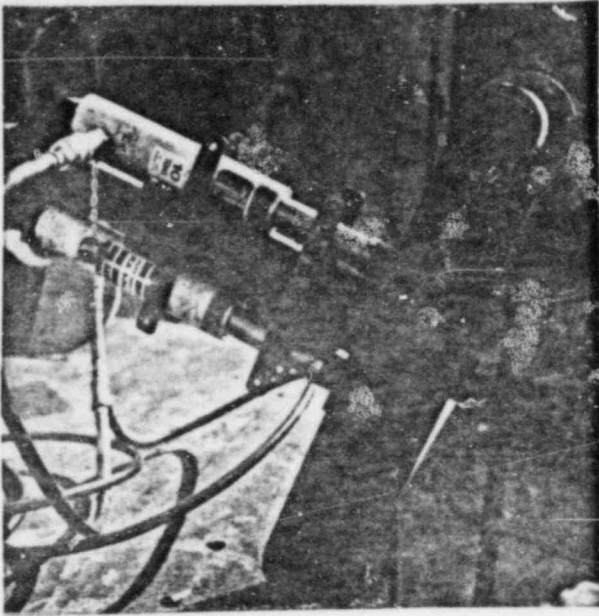


Figure 1 - Bench test of rebar bender for use on partially embedded rebars of shield building.



Figure 2 - Quality Control inspector uses template to examine bend radius. Bender frame in foreground.



Figure 3 - Rebar bender in field use. Note heavier side plates (arrow) found to be necessary after bench test.



Figure 4 - Rebar being bent on the parapet of the shield building. Rebar is tied down before release of hydraulic pressure.



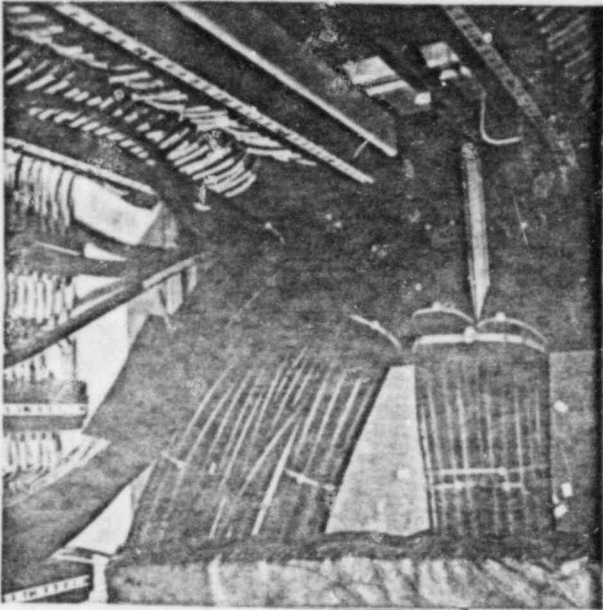


Figure 5 - Cable entry into cabinet in south relay room. Cable tie supports are in question. See text.



Figure 6 - Electrician terminating cables checks computer developed "termination card" against identified termination points.

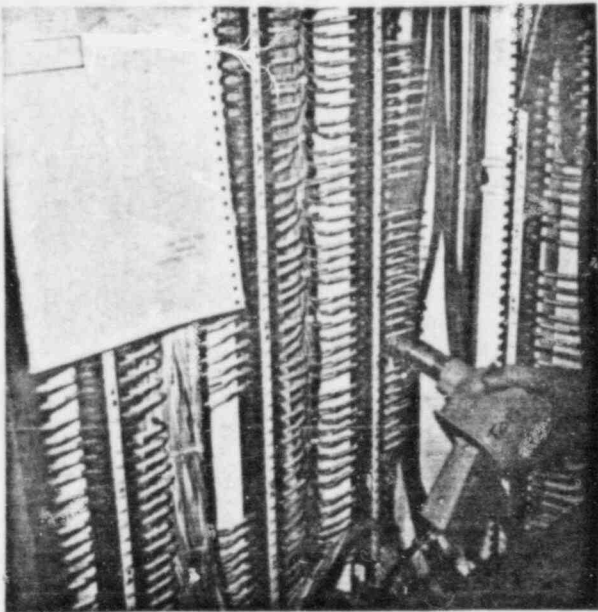


Figure 7 - Induction heating "gun" shrinks cable identifier sleeve on wire after lug has been crimped to wire.

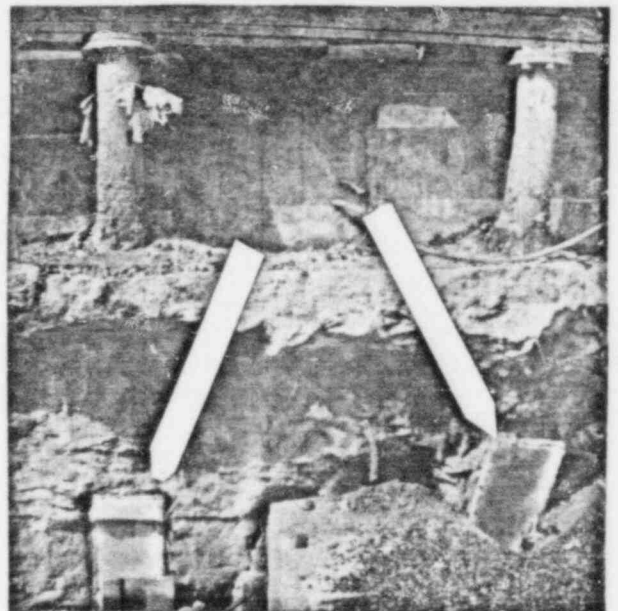


Figure 8 - Arrows point to metal protecting shields for half-round pipes which compose the subsurface vertical drains of the Ground Water Drainage System.