

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-397/82-23

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

Licensee: Washington Public 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: September 1-30, 1982

Inspectors: R T Dadds 10/28/82
A. D. Toth, Senior Resident Inspector
Construction Date Signed

R T Dadds 10/28/82
R. A. Feil, Senior Resident Inspector
Construction and Operations Date Signed

Date Signed

Approved by: R T Dadds 10/28/82
R. T. Dadds, Chief,
Reactor Projects Section 1 Date Signed

Date Signed

Summary:

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Areas Inspected: Routine, unannounced inspection of structural steel welding work and weld material records, and safety-related piping work. The inspection involved 46 inspection hours on-site by the two resident inspectors.

Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

Washington Public Power Supply System

- +W. Bibb, Power Generation Director
- +G. Bouchey, Nuclear Safety and Licensing Manager
- *C. Carlisle, Deputy Program Director
- L. Floyd, Senior Quality Assurance Engineer
- +R. Glasscock, Licensing and Assurance Director
- G. Hansen, Senior Engineer
- +B. Holmberg, Project Engineering Manager
- R. Knawa, Quality Verification Program Manager
- R. Kronlicki, Principal Quality Assurance Engineer, ASME Level III
- +P. Powell, Licensing Engineer
- +*R. Johnson, Project Quality Assurance Manager
- +D. Timmins, Assistant to Managing Director
- D. Welch, Nondestructive Examination Services Supervisor

Burns and Roe Engineering (B&R)

- +J. Mallanda, Senior Electrical Engineer

Bechtel Power Corporation (BPC)

- D. Cosgrove, Quality Assurance Engineer
- J. Gatewood, Project Quality Assurance Engineer

EDS (Consulting Services)

- +D. Wert, Engineer

Bonneville Power Administration (BPA)

- +W. Chin, Representative
- P. Grady, Representative
- +W. Hoberg, Thermal Projects Manager

*Denotes personnel present at the exit management meeting of October 1, 1982.

+Denotes personnel present at the cable separation meeting of September 29, 1982.

2. General

Resident inspectors were on-site September 1-3, 13-17, and 27-30.

The construction resident inspector attended a September 2, 1982 subcommittee meeting of the Advisory Committee on Reactor

Safeguards, in Richland, Washington. A regional office inspection supervisor (R. Dodds) attended the meeting, as well as the NRC licensing project manager (R. Auluck).

Regional office inspectors (J. Elin & D. Willett) were on-site September 1-3. Their activities are documented in separate inspection reports.

The resident inspectors participated in meetings at the NRC regional office relating to cable separation criteria and Systematic Appraisal of Licensee Performance (SALP) September 20-23, 1982.

The NRC nondestructive examination equipment van arrived on-site September 20. NRC Region I supervisory personnel (R. Kerch and R. Harris) and Wisconsin Testing Company technicians (L. Patzer and K. Grevenow) arrived on-site September 27 and commenced independent verification activities. The construction resident inspector assisted in coordination of these activities, which will be documented in a separate inspection report.

A regional office inspection manager (D. Sternberg) was on-site September 29, 1982, in company of a regional inspector (J. Elin) to discuss electrical cable separation.

3. Safety-Related Structures Weld Records

The inspector reviewed records of weld electrodes used in structural steel welding. This included selection of welds from work packages which had completed the WBG and Bechtel documentation review cycles. Specific welds were selected from the reactor vessel space frame (bearing plate E-4, stiffener plate weld #68, flange weld F-28, and anchor bolts C7-1 and F-6), and containment penetration sleeve X-18B. Weld material heat numbers included 402T4721, 402J6401, 401S6282, 92030, and 422W1141. Each of the materials was ASME-SFA-5.1 type E7018 welding electrodes.

The inspector reviewed the purchase order and applicable certified material test report for each heat of material, and the associated discrepancy reports and resolution documents where applicable.

The sample selected demonstrated original WBG poor procurement control, with purchase awards made to vendors which were not on the approved vendor list, and receipt of material which did not conform to all of the purchase order requirements. Resolution of the issues generally involved recognition that the

vendor did possess an ASME Material Supplier Certification at the time of the purchase and shipping, in spite of the WBG failure to document certification of the supplier.

For the Teledyne McKay 3/32-inch electrodes heat number 401S6282 (Lot Number 26524) the Material Test Report Supplementary Data sheet demonstrated that the as-welded Charpy V-Notch impact average-lateral-expansion was 29-mils, which did not appear to meet the purchase order requirement of 40-mils. This had been identified by the WBG internal review process, and was dispositioned by the Bechtel welding engineering group, with acceptable bases documented on record 215-IR-08019. The inspector interviewed the Bechtel reviewer and examined the basis for the disposition. This included recognition that the 40-mil criteria are applicable to ASME post-weld-heat treated welding applications, and was not a basic SFA-5.1 Standard requirement.

No items of noncompliance were identified.

4. Safety-Related Structures Welding

The inspector observed the work in-process by a Bechtel welder at a safety-related structural steel pipe whip support structure in the main steam area of the turbine building. Fit-up and first pass welding were in-process by welder BP-164, on welds N2 and N4 of drawing FSK-W-040 (Revision 4).

The joint identification and location were clearly shown in the applicable drawing. Joint configuration and alignment appeared to be in accordance with the drawing details.

An inspection record (QCIR) was in existence, but the inspector had not yet checked the weld, he had just been assigned the responsibility for the work, following a department reorganization. The applicable QCIR included four check-off columns for different attributes. These each were identified as encompassing several welds, e.g. A)- 14 welds, B)- 12 welds, C)- 12 welds, D)- 12 welds. The quality control inspector stated that the QCIR was initiated by another inspector, and that he would probably rework the QCIR to reflect smaller parcels of work. Some attributes were mandatory review of inspection hold-points; for others, the attribute was designated as a "surveillance point". The workers were not required to advise the inspector when work approached a point for appropriate surveillance inspection; it was the inspector's responsibility to be aware of work status and to check at least some of the surveillance points. However, the actual effect was that the

inspector was pressed for time, (due to paperwork reviews, training of peers, or other reasons), and he simply did not perform the inspections.

The NRC inspector interviewed the Bechtel supervisory personnel, who stated that they expected the inspectors to spend sufficient time in the field to observe sufficient work to identify any discrepancies. However, the managers could not identify the percentages or any other measure of the inspector performance in this regard. This did not appear consistent with prior WPPSS commitments to NRC to develop performance standards for important project control activities.

The inspector discussed with the WPPSS and Bechtel quality assurance managers the apparent lack of Bechtel performance standards and monitoring for the inspector surveillance activities. These personnel stated that they would review the matter. This will be considered in future reviews of the adequacy of Bechtel process control.

No items of noncompliance were identified at this time. However, the observed program weaknesses have been identified for NRC follow-up action (397/82-23-01).

5. Safety-Related Piping-Fuel Pool Cooling Piping

The inspector observed the fit-up, tack welding and root-pass welding for weld #7 on the fuel pool cooling bypass between the influent and effluent to the reactor. The inspection record (QCIR) identified the various parameters for inspection and documentation. The inspector verified that the weld was identified by number and that welders identification was located on the flange being welded. The inspector observed that the parameters for fitup and welding were adhered to and that the process was checked by a quality control inspector.

No items of noncompliance or deviations were identified.

6. NRC Independent Nondestructive Testing

The resident inspector assisted the NRC Region I personnel in the inspection or records and other activities for independent nondestructive testing of piping welds at the site. The NRC nondestructive testing van was on-site and NRC staff engaged in nondestructive examination between September 27 and October 6. The resident inspector had selected 33 welds for examination. These represented the highest pressure parts of each safety-related system, from pump discharge points to the reactor vessel or toward the containment building. Each weld size was proportionately included for each selected line, ranging from 4-inches

to 30-inches diameter. Systems included high pressure core spray, low pressure core spray, residual heat removal, reactor core isolation cooling, main steam, feedwater, and service water.

On July 29 the resident inspector advised the licensee of which 33 welds would be examined, and the scheduled work period of the NRC technicians. In the morning of September 27 the inspector reminded the licensee that lines must be drained and accessible for radiography. Of the 33 candidate welds, the licensee was offered the opportunity to select six which he preferred to be worked each evening, to allow him to integrate the NRC effort with the ongoing system flushing and hydrotesting activities, and minimize the project schedule impact of the NRC effort.

The NRC technicians accomplished only 20 of the planned 33 radiographs, due to repeated failure of the Supply System project management to assure that welds which they identified were drained so as to permit the radiography. The inability to achieve the planned radiography work scope was related to the licensee's ineffectiveness in coordinating construction management and system startup activities. The press of time also precluded achieving other examinations which were originally planned for the 33 welds, such as metallurgical tests and magnetic particle examinations.

In view of the time lost, on the morning of October 4 the NRC inspectors requested the Supply System for assistance to effect timely resolution of an indication identified during the NRC radiography of weld RHR-899-8.11-W2; ultrasonic examination by the licensee was requested. The Supply System agreed to perform the examination; however, the NDE group later found that they had no calibration blocks specific to the piping, and they elected to not perform the examination. The NRC technicians performed the examination on the evening of October 5, using standard calibration blocks and confirming the presence of an unacceptable discontinuity in the weld. The Supply System subsequently performed a similar standard UT examination and confirmed the NRC finding.

In addition to the independent radiography performed, the NRC supervisor reviewed existing licensee radiographs for over 100 welds. Specific attention was given to evaluation of the Bechtel radiograph review effort, including basis for disposition of marginal indications on film, adequacy of film quality, and qualification of the Bechtel nondestructive testing personnel.

The Bechtel management did not cooperate with the NRC supervisor in his request to have the Level III NDE qualification examination records brought to the site for review (the Bechtel Level III

engineer was scheduled to come to the site from the San Francisco office during the second week of the scheduled NRC inspection activities). The Bechtel representative stated that Bechtel was attempting to maintain the examination records confidential, and invited the NRC supervisor to visit the San Francisco office for auditing purposes.

No items of noncompliance were identified relative to the resident inspector activities. The results of the NRC non-destructive testing activities will be documented in a separate inspection report.

7. Plant Tours

The inspectors toured the safety-related areas of the physical plant at various times between September 1-30, and performed follow-up record reviews as indicated. They attended construction and quality management meetings relative to overall project status and the reverification program.

8. Management Meeting

At the end of this report period, the resident inspectors met with the Deputy Program Director and the Project Quality Assurance Manager to discuss the status of inspection findings and other inspection activities relating to this project.