

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-460/91-01 and 50-508/91-01

Docket Nos. 50-460, 50-508

Construction Permit Nos. CPPR-134, CPPR-154

Licensee: Washington Public Power Supply System
P.O. Box 968
Richland, Washington 99352

Facility Names: Washington Nuclear Projects 1 and 3 (WNP-1, WNP-3)

Inspection at: Richland, Washington and Elma, Washington.

Inspection conducted: December 16 through 19, 1991 and
January 13 through 15, 1992

Inspector: Todd B. Sundsmo

Approved by:


Paul Narbut, Acting Chief,
Engineering Section

FOR P.N.

2/7/92
Date

Inspection Summary:

Areas Inspected: An announced, routine inspection of Quality Assurance activities associated with the implementation of the WNP-1 and WNP-3 preservation programs during their extended construction delays was performed. Inspection procedures 92050 and 30703 were used during this inspection.

Results:

Of the areas inspected, no violations or deviations were identified.

Attachment 1

DETAILS

1. Personnel

WNP-1 plant staff contacted:

- * J. Burke, Maintenance Manager
- * J. Burn, Director, Projects
- * W. David, Project Manager, WNP-1/3
- * G. Dyekman, Site Manager
- * T. Houchins, PQA Manager
- H. Kadinger, Maintenance Foreman
- * L. Oakes, Engineering Manager
- * L. Peters, QA Engineer
- * W. Rau, Property Manager
- * J. Wendland, Material Specialist

* Denotes those at the exit meeting on December 19, 1991.

WNP-3 plant staff contacted:

- * J. Cooper, Project Business Manager
- * B. Crow, Administration Manager
- * M. Deboard, Maintenance Supervisor
- * W. Drinkard, Quality Assurance Manager
- * J. Hayes, Warehouse Supervisor
- * L. Hill, Plant (Operations/Maintenance) Manager
- * T. Houchins, Quality Assurance Manager
- * R. Kahl, Security Lieutenant
- * J. Perreault, Engineering Manager
- C. Reid, Preservation Engineering Manager
- J. Rett, Site Support Services Manager
- * R. Taylor, Deputy Site Manager
- * D. Strassburger, Records and Document Control Supervisor

* Denotes those at the exit meeting on January 15, 1992.

2. Background and Plant Status

WNP-1 and WNP-3 are in a construction delay status, and are considered by the licensee to be 62% and 76% complete, respectively. There is no fuel on either site. Plant equipment is maintained according to WMC-056, "WNP-1 Preventive Maintenance Program" and WMC-051, "WNP-3 Preventive Maintenance Program." These documents describe the equipment storage requirements that have been implemented, and specify periodic equipment preservation maintenance. Personnel assignments at each site have been stable. WNP-3 management consists of both Supply System and Ebasco employees; WNP-1 is managed by Supply System employees.

Significant events that occurred at WNP-1 in 1991 include:

- o The NRC extended the licensee's construction permit until June 1, 2001.
- o The American Society of Mechanical Engineers (ASME) conducted a site inspection and renewed the licensee's "N certificate" authorization to expire on June 21, 1994. This authorizes the

licensee to construct components designed to ASME Section III, Division I.

- o Removal of WNP-4 equipment from the site was completed. This significantly increased the amount of warehouse storage space available for use by WNP-1.

In addition, the licensee performed an unplanned inspection of the WNP-1 1A Steam Generator in response to recent steam generator problems identified at other facilities. This inspection did not identify any abnormal material conditions.

Significant events that occurred at WNP-3 in 1991 include:

- o The American Society of Mechanical Engineers (ASME) conducted a site inspection and renewed the Ebasco's "N certificate" authorization to expire on June 21, 1994. This authorizes Ebasco to construct components designed to ASME Section III, Division I.
- o Removal of WNP-5 equipment from the site was completed. This significantly increased the amount of warehouse storage space available for use by WNP-3.
- o Maintenance tasks were consolidated so that similar tasks would be performed at the same time; task frequencies were evaluated, and reduced (or increased) when deemed appropriate by the licensee.

3. Quality Assurance Program at WNP-1

The on-site quality assurance (QA) department at WNP-1 consists of the Projects Quality Assurance Manager and one inspector. The WNP-1 QA Manager is also assigned WNP-3 duties which account for 25% - 30% of his time. QA Program activities are described and performed in accordance with WMC-015, "Design and Construction Quality Assurance Requirements."

The unanticipated WNP-1 1A Steam Generator inspection and the scheduled March 1991 ASME inspection resulted in 21, instead of the scheduled 12, completed surveillances in 1991. Surveillances performed in 1991 initiated 24 non-conformance reports (NCRs). A larger number of NCRs had been identified in 1989 and 1990, however, the QA Manager stated that many of the previous years NCRs had been initiated in order to close out a large number of open Maintenance Work Requests (MWRs).

WNP-1 QA inspectors also performed receipt inspections as required by WMC-015. These inspections were primarily for consumables or components that had been sent off site for maintenance.

An annual audit of the preservation program at WNP-1 is periodically conducted by Washington Public Power Supply System (WPPSS) staff that are not assigned to WNP-1. The inspector reviewed the 1990 and 1991 audits and noticed that the 1991 audit, when compared to the 1990 audit, appeared to focus less attention on QA activities.

In order to maintain the status and material condition of site equipment, the licensee has designated four levels of equipment warehouse storage, Levels A, B, C, and D, which are consistent with ANSI/ASME N45.2.2-1978 classifications. Equipment storage within these areas appeared proper, and appropriate for each classification level.

No violations or deviations with the QA program areas inspected were noted.

4. Review of QA Records at WNP-1

The inspector reviewed the following QA documents:

<u>DOCUMENT #</u>	<u>TYPE OF DOCUMENT</u>
	1990 Annual QA Audit. 1991 Annual QA Audit. 1991 QA Surveillances.
QFR 91-01	Annual audit QFR (closed).
QFR 91-02	Annual audit QFR (closed).
QFR 91-03	Annual audit QFR (open).
1-SUSY-212 MWR AT-0153	QA surveillance for material storage, with NCRs. MWR that corrected NCRs for 1-SUSY-212 (above).
MWR AS-078	Random oil sampling and laboratory analysis.
1-SNCR-29-01	Open NCR for fire protection.
1-SNCR-58-29	Open NCR for removal of Rosemount transmitters.
1-SNCR-131B-01	Open NCR for Rosemount transmitters loosing oil.
1-131B-19759	Receipt inspection: Rosemount transmitters.
1-219485-19676	Receipt inspection: differential pressure indicator.
1-213992-19589	Receipt inspection: fire protection equipment.

In addition to inspecting these records, the inspector also conducted a walk-through inspection of the record storage vaults that contained the licensee's radiography, microfiche, design, vendor, and other QA records. The record storage areas appeared clean and dry; hygrothermographs were used to monitor temperature and humidity in these storage areas.

No violations or deficiencies were identified with the licensee's records or record storage areas that were inspected.

5. Review of Maintenance and Training Records at WNP-1

The inspector reviewed task accomplishment cards (maintenance records) for eleven different components. These components / systems were also inspected during the plant walk-through:

<u>SYSTEM NUMBER</u>	<u>SYSTEM NAME</u>
RPS-CAB-3C	Reactor Protection System Cabinet 3C.
1-FWA-PMP-3C	Auxiliary Feedwater Pump (turbine) 3C.
DHR-HX-2B	Decay Heat Removal Heat Exchanger 2B.
EDG-DG-2A	Emergency Diesel Generator 2A.
RCS-SG-1A	Steam Generator 1A.
1-RCS-PMP-4	Reactor Coolant System Pump 4.
1-MSS-PHO-1C	Main Steam Stop Valve 1C.
1-MUS-PMP-2B	Make Up System (safety injection) Pump 2B.
1-IAC-PPU-1A	Instrument Air Compressor 1A.
4-PFP-BTT-1	Fire Protection Battery 1.
4-PFP-PMP-1	Fire Protection Pump 1.

The inspector also reviewed the training records and methodology for maintenance and QA personnel. Each department appeared to have an active, documented training program. The inspector noted that the training conducted for QA personnel and other members of the staff consisted mostly of current event type training on items such as plant, procedural, and regulatory changes. Additionally, technical training was performed for craft personnel.

The records that the inspector reviewed appeared to be complete. No violations or deviations were identified with the licensee's records or record storage areas that were inspected.

6. Work Observation at WNP-1

The inspector observed the following routine preservation maintenance tasks:

<u>TASK/PROCEDURE</u>	<u>TASK DESCRIPTION</u>
MPI 2.23 & 2.24	Changing hygrothermograph cards and fire protection system inspection.
1-HCL-FAN-1A	Fan rotation.
1-HCL-M-1AFAN	Fan motor rotation (coupled to fan 1A).
1-HCL-FAN-2A	Fan rotation.
1-HCL-M-2AFAN	Fan motor rotation (coupled to fan 2A).
1-HSC-FAN-1A	Fan rotation.
1-HSC-M-1AFAN	Fan motor rotation (coupled to fan 1A).
1-HSC-FAN-2A	Fan rotation.
1-HSC-M-2AFAN	Fan motor rotation (coupled to fan 2A).

No evidence of water was found in any of the areas observed during these tasks. The cleanliness, preservation, and protection of equipment, including housekeeping, were satisfactory. No violations or deviations were identified while observing these tasks.

7. Plant Equipment and Material Inspection at WNP-1

The inspector conducted a walk-through inspection of equipment and material storage areas. These storage areas included Containment, General Services Building (GSB), Circulating Water Pump House, Service Water Pump House, warehouse numbers 1, 2, 3, 4, 5; Building numbers 87, 114, 206, 238, 253; outside yard numbers 167, 253; and the Spool Yard. These areas contained Level A, B, C, and D storage. Material storage and use of dunnage, both inside and outside, appeared adequate.

The inspector identified that Building #87 (Level B storage) did not have automatic fire protection. The licensee informed the inspector that there are three other buildings and six enclosures without automatic fire protection that are designated for Level B storage. Licensee procedure PSP 6.12, Attachment 5.5, "Storage and Housekeeping" Section B.2 requires that, "Level B items will be stored in a noncombustible building or within a self-extinguishing, tear resistant, . . . enclosure." The licensee stated that this condition had been evaluated. The licensee evaluation concluded that these particular buildings did not require self-extinguishing fire protection due to the type of building construction, and types of material currently stored in them. However, the licensee was not able to provide documented justification for not having an automatic fire protection system in these areas. The inspector noted that this decision was not documented, that there were no procedural controls to ensure flammable materials would not be stored in these buildings, and that PSP 6.12 may need to be revised to incorporate the licensee's evaluation results.

No evidence of water or abnormal material corrosion was observed in any of the inside storage areas. Cleanliness, preservation, and protection of equipment, including housekeeping, were satisfactory. Moisture indicators were being used to indicate humidity inside of tanks and enclosed spaces. There was no evidence of rodents, however, the inspector did find some evidence of spiders in several of the storage buildings. Hygrothermographs in these storage areas were in calibration, in operation, and reading in specification.

No violations or deviations were identified in the areas inspected.

8. Quality Assurance Program at WNP-3

The on-site quality assurance (QA) department at WNP-3 consists of the Quality Assurance Manager. The WNP-1 QA manager is also assigned WNP-3 duties which accounts for about 25% - 30% of his time. QA program activities are described in ETR-1001, "WNP-3 Nuclear Quality Assurance Manual."

The QA program identifies 11 areas that receive periodic surveillances scheduled throughout each year. The inspector noted that delays in performing surveillances from April to December 1990 caused them to be performed at a longer frequency. These delays were identified by the licensee, and the surveillance schedule was restored in January, 1991.

Surveillances performed in 1991 initiated 15 non-conformance reports (NCRs) which were either administrative or housekeeping in nature.

The WNP-3 QA Manager also performed receipt inspections as required by ETR-1001. These inspections were primarily for plant preservation consumables.

Annual audits of the preservation program at WNP-3 are periodically conducted by Washington Public Power Supply System (WPPSS) staff and Ebasco staff that are not assigned to WNP-3. The inspector reviewed the 1990 and 1991 audits and noticed that the WPPSS 1991 audit, when compared to the 1990 audit, appeared to focus less attention on QA activities.

In order to maintain the status and material condition of site equipment, the licensee has designated four levels of equipment warehouse storage, Levels A, B, C, and D, which are consistent with ANSI/ASME N45.2.2-1978 classifications. Equipment storage within these areas appeared proper, and appropriate for each classification level.

No violations or deficiencies with the QA program areas inspected were noted.

9. Review of QA Records at WNP-3

The inspector reviewed the following QA documents:

<u>DOCUMENT #</u>	<u>TYPE OF DOCUMENT</u>
	1990 Annual QA Audits. 1991 Annual QA Audits. 1991 QA surveillances.
QFR 91-03	Annual audit QFR (closed).
QFR 91-04	Annual audit QFR (closed).
MWR AW-4242	Random oil sampling and laboratory analysis.
MWR AW-4184	Rust on penetration #106.
MWR AW-4487	Cracked transformer insulators.
MWR AX-0124	Main turbine dehumidifier repair (open).
EB-183	Open NCR for warehouse storage conditions.
EB-185	Closed NCR for rebar dunnage.
EB-186	Closed NCR for control of warehouse storage.
EB-201	Closed NCR for training documentation.
MRIR-0163	Receipt inspection.
MRIR-0159	Receipt inspection.
MRIR-91-022	Receipt inspection.

In addition to inspecting these records, the inspector also conducted a walk-through inspection of the record storage vaults that contained the licensee's radiography, microfiche, design, vendor, and other QA

records. Record storage areas appeared clean and dry. Hygrothermographs were used to monitor temperature and humidity in these storage areas.

No violations or deviations were identified with the licensee's records or record storage areas that were inspected.

10. Review of Maintenance and Training Records at WNP-3

The inspector reviewed task accomplishment cards (maintenance records) components. These components / systems were also inspected during the plant walk-through:

<u>SYSTEM NUMBER</u>	<u>SYSTEM / COMPONENT</u>
03-MISC-EQUIP-390	Refueling Water Storage Tank
03-CH-PP-2C	Charging System Pump 2C
03-AF-PP-1A	Auxiliary Feedwater System 1A
03-CS-HX-1B	Shutdown Cooling Heat Exchanger 1B
03-CS-PP-1B	Shutdown Cooling Pump 1B
03-MS-SG-2	Steam Generator #2
03-MS-V-001	Main Steam Isolation Valve (warehouse storage)
03-DG-ENG-1B	Emergency Diesel Generator 1B
03-SI-PP-2A	Safety Injection Pump 2A

Review of maintenance records for these systems was complicated by the fact that the licensee consolidated the preservation maintenance program in 1991. Similar type maintenance tasks were grouped together, and the frequency of the maintenance performed was often decreased. This usually resulted one component being listed under more than one maintenance number or having its frequency changed.

During this review, the inspector identified that the preservation maintenance task of monitoring Steam Generator nitrogen pressure (03-MS-SG-2) had been replaced by a more frequent operator log entry. Preservation maintenance records were being maintained in a locked vault with a controlled atmosphere, however, the operator logs were maintained in a manager's office file cabinet. This discrepancy was identified to the licensee's staff, who agreed to resolve it before the exit meeting for this inspection. The licensee's staff later stated that logs more than three months old would be maintained in a vault.

The inspector also reviewed the training records and methodology for maintenance and QA personnel. Each department appeared to have an active, documented training program. The inspector noted that the training conducted in 1991 consisted of current event type training on items such as plant, procedural, and regulatory changes; as well as refresher or development training. However, the refresher / development type training was unique to 1991 because special budget considerations had been given to this year only; it appeared that future budgeting did not include this type of training.

The records that the inspector reviewed appeared to be complete. No violations or deviations were identified with the licensee's records or record storage areas that were inspected.

11. Work Observation at WNP-3

The inspector observed the following routine preservation maintenance tasks:

<u>TASK/PROCEDURE</u>	<u>TASK DESCRIPTION</u>
03-RC-PP-1B ,14603/05	Replace snubber desiccant.
03-WS-SKID-1	Visual inspection of Radiation Waste System skid.
03-FP-TK-2	Visual inspection (internal) of Auxiliary Fire Water Tank.

No evidence of water was found inside any of the buildings observed during these tasks. The cleanliness, preservation, and protection of equipment, including housekeeping, were satisfactory. No violations or deviations were identified while observing these tasks.

12. Plant Equipment and Material Inspection at WNP-3

The inspector conducted a walk-through inspection of equipment and material storage areas. These storage areas included Containment, Reactor Auxiliary Building (RAB), warehouse numbers 1, 2, 3, 7, 34, 36, 47, and 62; and the outside storage yards. These areas contained Level A, B, C, and D storage. Material storage and use of dunnage, both inside and outside, appeared adequate and in accordance with the licensee's procedures. The licensee's Level A and B storage areas had operable automatic fire protection systems.

No evidence of water or abnormal material corrosion was observed in any of the inside storage areas. Cleanliness, preservation, and protection of equipment, including housekeeping, were satisfactory. There was no evidence of rodents, however, the inspector did find some evidence of spiders in several of the storage buildings. Hygrothermographs inside these storage areas were in calibration, in operation, and reading in specification.

No violations or deviations were identified in the areas inspected.

13. Cracked Transformer Insulators at WNP-3

During the plant walk-through, the inspector also performed follow-up inspection on the cracked high voltage (HV) ceramic insulators that the licensee reported to the NRC as a potential 10 CFR 50.55(e) design deficiency in their letter dated June 10, 1991. There are three types of these insulators (Types I, II, and III) in use at WNP-3, only the

Type I insulators have displayed cracking. These insulators are compressed between a pressure plate and the HV coil of the transformer; these ceramic insulators provide the only means of physical support for the HV coil. The insulator diameter is approximately twice the thickness of the high voltage coil it supports; the cracked insulators observed by the inspector were not centered on the HV coil, and several had only 50% contact on the inner one-half of the insulator.

The cracked insulators pose a potential safety concern because they are used in Class 1E transformers that provide 480 volt power to safety related loads. This type of material / design deficiency may cause a common mode failure of multiple trains of safety equipment during an event causing physical shock to the electrical system, such as an earthquake (i.e., the cracked insulators may fail to support the HV coils, causing electrical faults in more than one safety train). This concern is also discussed in Diablo Canyon Nuclear Power Plant Inspection Report numbers 50-275/91-25 and 50-323/91-25. A follow-up inspection on the cracked insulators at WNP-3 has been planned by NRR Vendor Inspection Branch.

14. Exit Meetings

An Exit Meeting was held with the licensee's staff at WNP-1 on December 19, 1991 where the details regarding WNP-1 documented in this report were discussed, including the following key observations emphasized by the inspector:

- o The evaluation of Level B storage areas without automatic fire protection needs to be documented, and controls established to prevent flammable materials from being stored in these buildings. The licensee staff stated that they would consider documenting their position.
- o Care should be taken to ensure that the annual audit of Quality Assurance activities is thorough.

An Exit Meeting was held with the licensee's staff at WNP-3 on January 15, 1992 where the details regarding WNP-3 documented in this report were discussed, including the following key observations emphasized by the inspector:

- o Operator logs that document plant parameters to meet preservation maintenance requirements should be retained in the same manner as maintenance records that had been previously used to document the same data. The licensee's staff agreed and stated that logs more than three months old would be maintained in a vault.
- o Care should be taken to ensure that the annual audit of Quality Assurance activities is thorough.