

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

REGION V

Report No. 50-397/78-01

Docket No. 50-397

License No. CPPR-93

Safeguards Group _____

Licensee: Washington Public Power Supply System

P. O. Box 968

Richland, Washington 99352

Facility Name: Washington Nuclear Project No. 2 (WNP-2)

Investigation at: Benton County, Washington

Investigation conducted: February 28 - March 3, March 20-24, 28-31, April 5-7, 1978

Inspectors: T. W. Bishop

T. W. Bishop, Reactor Inspector

5/8/78

Date Signed

for O. C. Shackleton, Physical Security Specialist

5/8/78

Date Signed

Approved By: G. S. Spencer

G. S. Spencer, Chief, Reactor Construction and
Engineering Support Branch

5/8/78

Date Signed

Summary:

Investigation on February 28-March 6, March 20-24, 28-31,
April 5-7, 1977 (Report No. 50-397/78-01)

Areas Investigated: Reported falsification of records under the jurisdiction of the mechanical equipment installation and piping contractor at the WNP-2 site; types of documents involved; nature of falsifications; licensees stop work order along with definition and execution of pre-requisites for resumption of work; additional licensee planned actions; verification of existence of forgeries; reasons/incentives for forgeries; contributing system weaknesses; improper actions in other areas or at other facilities. The investigation involved 232 hours onsite by an NRC inspector and NRC investigator.

Results: No notices of violation have been issued as a result of this investigation.

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DETAILS

1. Persons Contacted

Principal Licensee Employees

D. L. Renberger, Assistant Director, Generation and Technology
L. L. Grumme, Manager, Technical Division
A. D. Kohler, WNP-2 Project Manager
B. K. McLeod, Q.A. Manager
C. Edwards, Specialist Project Q.A.
T. J. Houchins, WNP-2 Project Q.A. Manager
S. L. Washington, WNP-2 Q.A. Engineer
A. M. Sastry, Principal Q.A. Engineer

Burns & Roe, Inc.

R. C. Root, Deputy Project Manager
M. J. Parise, Deputy Project Q.A. Manager
H. Tuthill, Senior Project Q.A. Engineer
D. Reader, Lead Q.A. Engineer
G. Durkee, Q.A. Engineer

WSH/Boecon/Bovee & Crail/GERI

K. McCann, Vice President
E. Harrington, General Manager
E. Dietrich, Corporate Q.A. Manager
A. Larson, Q.A. Manager
34 other individuals, either employed or formerly employed by the contractor (names withheld to protect confidentiality).

2. Background/Initial NRC Notification

On February 25, 1978, the Washington Public Power Supply System notified the NRC RV that the mechanical equipment and piping installation contractor at the WNP-2 site had discovered five document packages pertaining to pipe supports which contained one or more falsified site-generated documents. The piping systems involved were auxiliary steam, control air, and demineralized water, which are not safety related systems.

On February 28, 1978, an NRC inspector was dispatched to the site and was apprised by the licensee of the following sequence of events:

On the afternoon of February 22, 1978, the contractor's Quality Assurance Manager was informed by one of his supervisors that duplicate pipe support record packages had been received for two pipe supports. The contractor's management started



questioning personnel on February 23, 1978 regarding these discrepancies. By February 25, 1978, the contractor's Quality Assurance Manager was told by a clerk that he (the clerk) had falsified some documents at the direction of a superintendent, and that he obtained assistance in generating the fraudulent documents from a general foreman. Discussions between the contractor's Quality Assurance Manager, the superintendent, and the general foreman substantiated the clerk's statement. It was explained that the falsification had been performed to enable completion of the document packages so that the piping systems involved could be placed in service to provide heat for the buildings. These systems were designated "priority systems-necessary for winter heat." It was further explained that the falsifications were limited to a few NF-69 forms (weld filler material withdrawal forms) during the period of 'priority systems' turnover (approximately mid-October 1977 to December 1977). The contractor then initiated a review of 1,646 pipe support record packages to determine the extent of the falsification. The records examined were associated with the non-safety related Quality Class II 'priority systems.' At the conclusion of the examination, a total of 39 record packages were suspected of containing one or more falsified documents. These included 36 Weld Filler Material Withdrawal forms (form No. NF-69) and 5 Weld History Inspection records (form No. NF-6). Safety related system records were not included in the review since the initial evidence and confessions tended to limit the scope of questionable records to work performed on the 'priority systems' during the period of October to December 1977. The clerk reportedly confessed to forging 11 of the 41 documents and stated that the handwriting on some of the others appeared to be that of the general foreman.

3. Initial Investigations into Safety-Related Systems/Stop Work Order

In an effort to determine if similar problems existed in the safety related area, on March 1, 1978, the NRC inspector examined 21 record packages for piping supports in the High Pressure Core Spray System. The review revealed four NF-69 forms which contained signatures of one individual which appeared different from other signatures in the records for that same individual. Accordingly, the individual was requested to examine the suspect documents. His conclusion was that two of the signatures were his and two were not. He explained that he felt two of the documents were forged because the formation of the letters R and y and the numeral 4 were not in his usual hand. He also explained that he uses a standard ball point pen and one of the forms appeared to be written with other than a ball point pen.



On the same day, a document review conducted by the licensee identified six more NF-69 forms with suspect signatures. These records were in Quality Class I pipe support record packages for the Reactor Closed Cooling, High Pressure Core Spray, and Service Air systems. Other document reviews by the licensee revealed several additional suspected forgeries on NF-69 forms for Quality Class II pipe supports.

Since the majority of the suspect documents involved the issuance of weld filler material (NF-69 forms), the licensee initiated a special audit of the control of weld filler material on March 1, 1978. This audit disclosed several instances where uncontrolled weld filler material had been stowed in "gang boxes" in the work areas.

On March 2, 1978, the licensee initiated a stop work order for all Quality Class I work on piping and pipe supports. Later the same day, the NRC RV issued an Immediate Action Letter to the licensee stating that it was understood that no work would proceed until the NRC had examined the corrective action plan, and that all records which were suspected of being fraudulent were to be collected and retained in a locked area to be held for NRC examination.

4. Action Taken Prior to Resumption of Quality Class I Work

On March 3, 1978, the licensee identified several actions which were to be accomplished prior to the resumption of Quality Class I work. These actions were identified to the contractor in Burns and Roe letter No. WNP2WBG-215-F-78-137 of March 3, 1978. The actions specified, and the NRC verification of these actions, are summarized below.

- a. Recovery of all Quality Class I pipe and hanger document packages currently in the field, engineering, QA and QC, and their storage in a secure area. Access to this area was to be controlled on a twenty-four (24) hour basis by the licensee's guard force, until completion of item b. below.

The inspector examined the contractor's documentation of the above action and conducted a survey in the field to verify that all Quality Class I packages had been recovered. Access control was also observed. All items were found to be satisfactory.

- b. Performance of a review of all Quality Class I document packages, under the direction and control of the licensee. The review was to include a check for authenticity of signatures and data, and completeness of records.

The inspector examined the guidelines to be used by the review teams and observed the training of review team members. Review activities were observed on March 4, 5, and 6, 1978. In addition, approximately 50 record packages were examined by the inspector following the review by the teams. It appeared that the teams were effective in identifying and documenting any discrepancies within the record packages. Packages containing documents with suspected forged signatures were transferred to the WPPSS/B&R Project QA records vault for retention. The review disclosed approximately 40 forgeries in pipe weld and pipe support weld packages. All of the forgeries involved the Weld Filler Material Withdrawal Form (No. NF-69).

- c. Preparation and issuance of a procedure for control of weld documentation packages (for both piping and hangers) which includes a log-in/log-out system.

Work Procedure No. 86, Rev. 0, titled "Work Package Control," was examined and found satisfactory.

- d. Search for and recovery of all unauthorized and uncontrolled weld filler material from the field.

The contractor's documentation of the weld rod purge was examined. A survey of the reactor building on March 5, 1978 by the inspector identified approximately 100 sticks of E7018 welding electrodes which were uncontrolled. Additional actions were then taken by WPPSS/B&R representatives to assure all weld rod on the site was properly controlled. Subsequent inspections of the work areas by the NRC inspector did not identify any uncontrolled weld filler material.

- e. Establishment of a revised, more effective weld filler material control procedure.

Work Procedure No. 1, Rev. 9, titled "Issuing and Control of Welding Filler Material" was examined and comments were provided to the licensee. Revision 10 was subsequently examined and found satisfactory.

- f. Provisions for training in the use of the revised weld filler material control and document package control procedures for personnel involved in welding, including superintendents, general foremen, foremen, rod room attendants, and QC personnel. The training program must include provisions to cover new hires, transfers, and promotions in addition to existing personnel.

The records of completed training were reviewed and found satisfactory. The formalized program for training of new hires, transfers, and promotions was still being developed. This aspect will be examined during a subsequent NRC routine inspection.

- g. Establishment of audit programs by the contractor and the licensee to assess the compliance with and effectiveness of the new control procedures, upon resumption of work.

The audit programs of both the contractor and the licensee were reviewed and found satisfactory. Examination of audit results and a sampling of approximately 15 work packages in the field, disclosed that the audits were effective in identifying weakness in the implementation of the new procedures. Corrective action taken in response to the audit findings will be examined during subsequent routine inspections.

5. Additional Licensee Actions

In addition to the actions specified as prerequisites for resumption of work, the contractor and licensee identified other actions being taken. These actions included: the identification of personnel responsible for the forgeries and completion of action necessary to prevent the recurrence of such activities; verification that other areas under the responsibility of the contractor are not similarly deficient, such as material receiving activities or machinery maintenance activities; development of a site-generic weld rod control procedure; and verification that the identified contractor's record discrepancies are thoroughly analyzed, and appropriate action taken to assure system hardware and final records meet all requirements.

Licensee and contractor activity regarding these additional actions was noted to be progressing, yet none of the items had been completely closed out as of April 6, 1978. Completion of these actions will be examined during a subsequent routine inspection.

6. Additional NRC Actions

In addition to the aforementioned verification activities, the NRC investigator and inspector conducted interviews with selected contractor employees. Two of these interviews were conducted jointly with the Richland area agent of the FBI. It was the intent of the NRC interviews to provide additional information regarding reasons, incentives, and scope of the forgeries; "system" weakness which may have contributed to the situation; other activities onsite where improper actions may have been taken; and possible involvement in irregularities at other nuclear facilities. In addition, the NRC investigator and inspector participated in interviews with individuals whose names were suspected of being forged to establish whether or not their signatures had indeed been falsified.

a. Scope, Reasons, and Incentives

Based on the results of the interviews, it was concluded that the forgeries were performed by lower echelon personnel assigned responsibility for records maintenance. It was further determined that the forgeries were limited to Weld Filler Withdrawal forms (No. NF-69) and a few Weld Record forms (No. NF-6). These conclusions reinforce the results of the licensee's record reviews which disclosed forgeries only in Quality Class I and II NF-69 forms and Quality Class II NF-6 forms. It was reported in the interviews that personnel responsible for maintaining records were, at times, frustrated regarding requirements for record retention. Specifically, several individuals reported that the retention requirements for the NF-69 forms were not clearly delineated until the fall of 1977, and even at that time, no instructions were provided regarding those NF-69 forms which may have already been misplaced. In one case an individual reportedly falsified signatures on NF-69 forms because he was too lazy to locate the individual responsible for signing the forms.

It should be noted that at no time during the interviews did anyone suggest that a NF-69 had not been issued for work performed -- rather, it was stated that forms were issued, the work was performed, and the records were subsequently misplaced. Then, at a later date when attempting to turn in the record packages, many of the packages were rejected for lack of a NF-69 form. Consequently, some of the missing forms were fabricated. It was reported that the information recorded on the falsified NF-69 forms was not indiscriminately applied. To the contrary, efforts were reportedly made to identify the specific individuals who performed the work and whose names should have appeared on the original forms.

With respect to the falsified NF-6 forms, admissions during the interviews indicated the forgeries were limited to sign-offs signifying the completeness of the forms and not the quality acceptance of welds. This distinction was substantiated by the results of the document review by the licensee.

One individual admitted to falsifying signatures on NF-6 forms to signify work progress, and to submitting inflated work progress reports* to reinforce his reputation as an individual "who can get the job done." Another individual apparently misinterpreted a superintendent's instructions to "make-up the record packages." The individual interpreted the words "make-up" to mean forge, whereas the superintendent had intended an aboveboard consolidation of record packages.

*These reports are not quality related documents.

It was concluded from the interviews that the primary reason for the document falsification was to obtain complete record packages for final acceptance and turnover of systems. The individuals involved did not appear to be malicious in their intent. There was no evidence to suggest that any individuals had any direct financial incentive to commit forgeries.

b. System Weakness

It appears that there were several items contributing to the problem of records falsification. As mentioned previously, specific guidance on the retention of NF-69 forms was not formulated until the fall of 1977, whereas work on the contract had been initiated in mid-1975. It was determined from the interviews that most of the workers involved in maintenance of work packages had no prior nuclear work experience and did not clearly understand the importance of nuclear quality records maintenance. Several individuals remarked that they did not understand the necessity for all of the forms, particularly since management did not define the need for forms until long after the work had started. Additionally, some individuals reported that, while the subject of forging NF-69 forms to replace missing documents was not openly discussed, it was "understood" that lost NF-69 forms could have replacement forms filled out. Based on the dates of forged documents and discussions with personnel, it appears forgeries were made as early as May 1977 and as late as February 1978.

In summary, it appears that the falsification of records occurred due to a combination of factors including inexperienced personnel with inadequate indoctrination and supervision; delinquent and incomplete management guidance; and insufficient program monitoring. It is obvious that contractor supervision was not effective, and management guidance was not sufficient, to prevent this type of activity. Also, it is not clear as to why program monitoring failed to detect these weaknesses over this long period of time. It is believed that the actions being taken by the licensee as outlined in Paragraphs 4.0 and 5.0 will preclude the recurrence of such activities under this contract. This conclusion will be further evaluated upon the receipt and examination of the licensee's report of this records falsification incident.

c. Other Activities

Each of the individuals interviewed was questioned regarding their knowledge of other activities on the site where improper actions may have been taken. Generalized comments were provided regarding unapproved drilling of concrete rebar for hanger anchor insert installation; improper anchor installation;



improper control of pipe joint fitup; and excess springing of pipe. The topics of unapproved drilling of rebar and improper anchor installation are currently under licensee review and were identified through the established QA program. The subject of pipe joint fitup and springing of pipe will be examined during future routine inspections.

d. Irregularities at Other Facilities

Discussions with the individuals regarding previous employment and the possible existence of irregularities at other nuclear facilities did not disclose any questionable situations.

e. Personnel

From discussions with personnel and construction management representatives, it was established that all personnel known to be involved in the forgeries have terminated employment with the contractor.

7. Management Discussion

Pertinent details of the investigation and the conclusions that have been drawn are to be discussed with licensee management personnel on May 9, 1978.

