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Washington Public Power Supply System

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Docket No. 50-397

June 15, 1984

REGION V

Mr. Ross A. Scarano, Director
Division of Radiological Safety and Safeguards Programs
U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Subject: NUCLEAR PLANT NO. 2
LICENSE NO. NPF-21
NRC INSPECTION 84-07
MARCH 19-23, 1984

- Reference: (1) Letter, J.D. Martin (Supply System) to R.A. Scarano (NRC) dated 5/10/84, same subject
- (2) Meeting, R. Dodds/A. Toth (NRC) with J. Martin/Staff on 5/24/84, Discussion of LER and Inspection 84-07 Responses
- (3) Letter G02-83-1080 dated 11/21/83 from G.C. Sorensen (SS) to J.B. Martin (NRC); NRC Inspection Report 83-14, Notice of Violation, Item C

Following our initial response to the Notice of Violation resulting from the subject inspection, the Supply System has completed several follow-up actions. This letter provides additional information to that submitted by Reference (1) and summarizes the status of corrective actions taken by the Supply System.

As you know, a number of reviews associated with Process Radiation Monitoring and Sampling activities have been performed. Last December, Radiological Programs began an independent review of Systems 36.0 - Process Radiation Monitoring, 37.0 - Radiation Monitoring, 97.0 - Meteorology, and 106.0 - Process Sampling. The objective of this review was to determine system readiness for entry into the Power Ascension Test Program (PATP) by showing the functional requirements for each system as stated in licensing commitments and regulatory requirements had been met.

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Mr. R.A. Scarano
NRC Inspection 84-07
Page 2
June 15, 1984

Early in the review, nineteen action items required to be closed before fuel load were identified (1). These items were subsequently addressed by the HP/Chemistry Manager and their impact on safety resolved on 12/24/83 prior to fuel load (2). The review continued through February 1984 when a second report was issued. This report itemized a total of 110 findings including the 19 above (3). Subsequently, a review of the Post Accident Sampling System (106.0-E) was made which delineated 23 preliminary action items, later changed to 16 (4).

At no time have we found radiological safety to be jeopardized. Throughout our review, we have found the systems and equipment to be in good operating condition. Negative findings involved inequities between installed systems and FSAR descriptions or lack of documented proof of capabilities (5).

As of June 14, 1984, 91 of the 126 identified items have been corrected and closed. The status of the 35 outstanding actions is summarized in Attachment 1. None of the 35 actions impact our PATP.

During the Reference (2) meeting, the differences between the June 3, 1983 violation in downgrading of QC 1 pipe supports (NRC Inspection Item 83-14-02) and the PED 218-I-B281 quality class misidentification (NRC Inspection 83-07-02) were discussed. It was noted that the procedures for review and issuance of PEDs were the same and the potential for commonality of cause for the two violations and the effectiveness of our technical reviews needed to be addressed.

NRC Inspection Item 83-14-02 identified an instance in which some pipe supports on safety related systems were inadvertently downgraded from QC 1, Seismic I to QC 2, Seismic I. This happened because stress pipe hanger designers were not sufficiently cognizant of plant system functions. These quality class misidentifications were corrected by Burns and Roe at the time of discovery.

As related in the Reference (3) response to NRC Inspection Item 83-14-02, BRI reviewed over 300 PEDs to evaluate the quality class downgrade problem. A sampling plan was devised to provide a 95% confidence level that less than 5% defects exist in the sample lot size (approximately 29000). Twenty PEDs were then identified that should have been denoted as QC 1; however, further evaluation concluded that the field contractors were working to the quality class designations required by contract specifications and associated drawings. None of the PEDs had revised these specifications or drawings. Also, eighteen of the twenty PEDs that should have been denoted QC 1 actually involved work on non-safety related systems in the category that Regulatory Guide 1.29 states are subject to "pertinent portions of 10CFR50 Appendix B" because of potential interactions with QC 1 systems.

Mr. R.A. Scarano
NRC Inspection 84-07
Page 3
June 15, 1984

The effectiveness of technical reviews relative to the quality class denoted on PEDs during construction was not considered critical because the quality class on specifications and drawings governed per contract. Our final response stated the following:

"Having identified these twenty (20) Quality Class 2 PEDs that were improperly classified per the requirements of WNP-2-017, the Supply System cannot rigorously comply with the 95% confidence criteria that less than 5% of the Quality Class 2 PEDs were improperly classified with respect to quality class, as originally intended. However, based upon the results of the PED evaluation program, summarized above, which indicates that there was no impact on the specified construction requirements, the Supply System:

- (1) does not believe that a significant problem warranting further investigation exists;
- (2) believes that design control has been maintained; and
- (3) believes that the problem identified with regard to the improper downgrading of some Quality Class 1 supports was an isolated occurrence."

PED 218-I-B281 for relocation of radiation monitors was issued in April 1983 - this date falling within the time span of the sample lot size noted above. Because further investigation was not deemed necessary as the above investigation concluded in November 1983, identification and correction of all misidentified PEDs was not accomplished. PED 218-I-B281, therefore, is an additional case in point in the total lot.

BRI PED 218 I-B281 was issued to relocate a safety system radiation detector from inside to outside a ventilation duct. The PED was unique in that the radiation detector had a safety related function; however, the ventilation duct on which it was mounted performs no active safety function and is not designated QC 1. The PED was issued QC 2, but implemented by the WNP-2 Startup organization with the same procedures implemented on safety related work. The PED itself did not authorize changes to quality class designations on drawings or Class 1E lists; however, a commercial grade installation would have been acceptable had the installation been complete, i.e., had washers/nuts been placed on the mounting bolts.

The work performed was not acceptable regardless of quality class and there were no inprocess checks or inspections that identified the deficient mounting. A significant contributing factor was incomplete mounting instructions. An investigation was conducted by Burns and Roe, Inc., to alleviate the generic implication with regard to the installation directions for other safety related radiation detectors. Three Radiation

Mr. R.A. Scarano
NRC Inspection 84-07
Page 4
June 15, 1984

Monitoring (RM) systems are required for plant safety per FSAR Section 11.5.1.1: 1) Main Steam Line RM System; 2) Reactor Building Exhaust Plenum RM System, and 3) Control Room Fresh Air Intake RM System. The reactor building system was addressed in our initial response, Reference (1). The review of the other two systems is summarized in Attachment 3. No additional problems were found.

As part of our response to the Notice of Violation contained in Reference (1), we discussed corrective steps we have taken to avoid recurrence of misidentified quality class on PEDs. We maintain that the WNP-2 design control process now governed by the Operating Plant Procedures Manual, coupled with the Plant Technical Staff review of PEDs and the Engineering Directive regarding use of the quality class 1 computer listings (MEL, Class 1E and SRM lists), will negate future classification problems. We believe our technical review procedures are superior to industry standards because the quality of these reviews is dependent upon the integrity and expertise of the individual engineers.

The Notice of Violation resulting from NRC Inspection 84-07 included the problem of incorrect quality classification of radiation monitors on working documents. As discussed in the Reference (1) response, Plant Quality Assurance (QA) conducted an initial review of seven systems for misidentification of Quality Class (QC) on Test and Startup work documents. We reported that no significant deficiencies or trends were found except in System 36.0, Process Radiation Monitoring, where seventeen Startup documents were found misidentified (8). Concurrent with this review, the NRC Resident Inspector noted that standby gas treatment fire protection deluge valves were classified QC 1. Fire protection is a QC 2 system and it was found that two Startup documents and one PED concerning these valves were misidentified as QC 2.

Accordingly, Plant QA extended their review to include Startup documentation for all QC 1 equipment items that are scoped within QC 2 system boundaries. System Lineup Component Tracking (SLCT) listings for 42 QC 2 systems were cross-checked with the Class 1E/SRM QC 1 listing to obtain the QC 1 components in each system. Twelve of the 42 systems contain QC 1 equipment items and each of the QC 1 component folders in the Test and Startup files were reviewed. All SDRs, SPRs, SWRs, MWRs, Instrument Test Records and any referenced PEDs were checked to assure they were marked as QC 1.

The results of the document review are presented in Attachment 2 (9). It can be seen that System 36.0 has the greatest number of QC 1 components and correspondingly the greatest number of misidentified documents. However, the data show that the misidentification was not predominately confined to System 36.0 as originally indicated in our early review. All but two of the twelve systems had misidentified work documents.

Mr. R.A. Scarano
NRC Inspection 84-07
Page 5
June 15, 1984

It appears that the root cause for misidentification of quality class is twofold:

- 1) The lack of clear and emphatic direction to the Test and Startup engineers to assure correct classification on working documents. This emphasis was needed predominately for QC 2 systems having QC 1 components.
- 2) The fact that both QC 1 and QC 2 work was performed according to the same procedures during Test and Startup activities negated the importance of proper classification. Standardized forms governing the work contain several identifying "block" entries, including the quality class block. The importance of correct information in these blocks was diluted through continued repetitive usage.

Corrective actions that have been taken to assure that the above type misidentification problems are precluded during WNP-2 plant operational activities are also twofold. First, direction was issued from the Assistant Director, Technology - Generation Engineering to all System Engineers designating the SRM/IE MEL lists as the governing document for identification of quality class for plant components (10). Secondly, similar direction was issued from the Plant Technical Department Manager to all WNP-2 Plant personnel to designate the Master Equipment List (MEL) as the governing document for quality and seismic classification for WNP-2 plant components (11).

Corrective actions for the specific misidentified documents are currently in progress. These actions, which are being tracked under the Plant QA Surveillance Program and scheduled for completion 6/22/84 (9), are as follows:

- 1) Each component affected by the identified documents will be reviewed to assure it is properly identified as QC 1, 2, or G.
- 2) Each document will be reviewed to determine the correct document quality classification.
- 3) The action described by that document will be reviewed to determine its potential affect on a quality component or function.
- 4) Work will be reinspected or retested as may be required by the review results.

Mr. R.A. Scarano
NRC Inspection 84-07
Page 6
June 15, 1984

Upon completion of the review, we will advise you of any final actions taken.

Should you have any questions please do not hesitate to contact me.

Very truly yours,

J.D. Martin
J.D. Martin (927M)
WNP-2 Plant Manager

jdb

Attachments

Radiological Programs
Status of Independent Review Open Items

<u>Number of Items</u>	<u>Item Description and Status</u>	<u>Target Completion</u>
14	These items identify changes needed to the FSAR to correct inconsistencies and update system descriptions to reflect current conditions. Eight SCNs for these items are being incorporated into the FSAR as Amendment No. 35.	August 1984
13	These items identify the actions remaining and procedure changes for the "Enhanced Calibration Program" associated with ANSI 13.10 criteria. (6) (7)	July 1, 1984
4	These items identify dosimeters not in compliance with ANSI N13.27. They are out of service pending testing, an FSAR change and procedure definition.	August 1, 1984
3	These items cover reorientation of one monitor and addition of booster pumps in sample lines (PMRs 02-84-0386 and -0541).	July 1, 1984
1	An academic item to revise plate-out calculation methods.	July 1, 1984

REVIEW OF TEST AND STARTUP DOCUMENTATION⁽¹⁾

Quality Class 1 Components in Predominately
Quality Class 2 Systems

<u>System No.</u>	<u>System Title</u>	<u>No. QC 1 Items</u>	<u>T&SU Documents Reviewed</u>	<u>Documents Marked QC 2</u>
4.0	Reactor Water Cleanup	22	106	12
11.0	Closed Cooling Water	13	52	8
31.1	Floor Drain Processing	4	42	3
31.2	Equipment Drain Processing	2	19	2
35.0	Radioactive Drains	12	66	2 ⁽⁴⁾
36.0	Process Radiation Monitoring ⁽³⁾	116	-(7)	20 ⁽⁵⁾
37.0	Radiation Monitoring	6	12	0
55.0	Tower Makeup	2	2	0
62.0	Fire Protection	28	3	3 ⁽⁶⁾
72.0	Reactor Feedwater System	2	4	2
80.0	Reactor Bldg. HVAC	24	75	8 ⁽⁶⁾
106.0	Process Sampling	26	-(7)	1 ⁽²⁾

- Notes:**
- (1) SDRs, SPRs, SWRs MWRs, referenced PEDs and Instrument Control Data Sheets contained in equipment system folders in the T&SU files.
 - (2) One MWR marked N/A for affixing code data plate.
 - (3) QC 1 system cited in NRC Violation (84-07-02).
 - (4) Twelve SDRs/SWRs generated at one time from one SPR marked in error counted as one.
 - (5) Includes three PEDs.
 - (6) Includes one PED.
 - (7) Reported in Surveillance 2-84-159; total documents reviewed not recorded.

RADIATION MONITORING SYSTEM REVIEWI. Main Steam Line Radiation Monitoring System
(FASR 11.5.2.1.1) MS-RE 3A, B, C, D (D17-N003A, B, C, D)

The following design drawings were reviewed at each revision level subsequent to the addition of the detectors. Any change documents were reviewed to verify consistent Q.C. I classification.

1. M563, currently Rev. 12 General Arrangement, TG Building, 501'-0"
 - Detectors added at Rev.6; no subsequent engineering change documents applicable to these detectors.
 - Detectors added by PCN 4621; design is to be per General Electric Spec. 22A4211, Rev.0 which requires that the installation "satisfy all safeguard requirements" (Paragraph 3.3.1.2).
 - M563 as a General Arrangement drawing carries no Q.C. designation. M565 (misc. Sections) was also reviewed with the same results.
2. E607, currently Rev.25 and E608, Detail "Z" (Rev.24) (I&C conduit and tray plans and details, operations floor, TG building, El. 501'-0")
 - Detectors added at E607, Rev.6; E608, Rev. 7 by PCN 4621. No subsequent change documents applicable to the detectors.
 - Per note 9 E599; Division 4, 5, 6, 7 conduit are SCI, OCI.
 - Installation by Supply System was Q.C. I (SDR-111711; SWR-15269)
3. S627, Rev. 14; S640 details of pipe sleeves added by PCN 4621 as Q.C. II. Since these are only guard pipes, the Q.C. II designation is appropriate.

II. Control Room Fresh Air Intake Radiation Monitoring System (FSAR 11.3.2.1.3)
WOA-RE-31A, B, 32A, B.

- These detectors were supplied under Contract 92B as a part of Sample Racks WOA-SR-18A, B 19A, B as Q.C. I, S.C. I equipment. Qualification data exists to support this classification (Burns and Roe F/N 92B-00-7237) as does Contract 92B design drawings.

Design Drawings:

92B-00-7037	P&ID	Q.C. I on Drawing
92B-00-7230	Monitor Wiring Diagram	Q.C. I on Drawing
92B-00-7149	Top Assembly	Q.C. I on Drawing
92B-00-7142	Wiring Diag. - C&I Box	Q.C. I on Drawing
92B-00-7088	Field Interconnect Wiring	Q.C. I on Drawing
92B-00-7025	Outline Drawing	Q.C. I on Drawing

- Same Racks were installed Q.C. I per drawing S755 (PFT 218-CS-A713)

BIBLIOGRAPHY

1. IOM dated 12/23/83 from D.E. Larson to J.D. Martin; Systems 36 - Process Radiation Monitoring, 37 - Radiation Monitoring; 94 - Meteorology, and 106 - Process Sampling
2. IOM dated 12/24/83 from R.G. Graybeal to J.D. Martin; same subject as above
3. IOM dated 2/3/84 from D.E. Larson to J.D. Martin; same subject as above
4. IOM dated 4/13/84 from D.E. Larson to J.D. Martin; Independent Review of System 106D, Preliminary Report
5. IOM dated 5/3/84 from D.E. Larson to J.D. Martin; Status Report on Independent Review of Systems 36, 37, 97 and 106
6. Letter G02-83-1128 dated 12/8/83 from G.C. Sorensen (SS) to A. Schwencer (NRC); Definition of Applicable ANSI 13.10 Criteria
7. Letter G02-83-1136 dated 12/9/83 from G.C. Sorensen (SS) to A. Schwencer (NRC); Definition of Applicable ANSI 13.10 Criteria
8. WNP-2 Plant QA Surveillance Reports 2-84-101 and -159 issued 4/5/84 and 5/2/84, respectively
9. WNP-2 Plant QA Surveillance Report 2-84-164 issued 5/18/84
10. IOM dated 5/10/84 from L.T. Harrold to C.R. Noyes/N.S. Porter/G.L. Gelhaus; Quality Class Designation of Design Changes for Class 1 Components
11. IOM dated 6/7/84 from K.D. Cowan to All Plant Personnel; Identification of Quality Classification and Seismic Classification for WNP-2 Components.