Arizona Nuclear Power Project
P.O. BOX 52034 • PHOENIX, ARIZONA 85072-2034

U. S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5368

June 12, 1985
ANPP-32817 EEVBJr/WFQ/WEI

Attention: Mr. D. F. Kirsch, Acting Director
Division of Reactor Safety and Projects

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528 (License No. NPF-41)
Notice of Violation 50-528/85-16/01 and 50-529/85-10/02
Inspection of Raceway Installations Units 1 and 2
File: 85-019-026; D.4.33.2

Reference: NRC Inspection Report 50-528/85-16, 50-529/85-10
Letter from D. F. Kirsch to E. E. Van Brunt, Jr.,
dated May 13, 1985

Dear Sir:

This letter refers to the inspection conducted by Messrs. J. R. Ball and G. H. Hernandez from March 3 - April 27, 1985. Based upon the results of the inspection, one Notice of Violation concerning QC verification of raceway installations was issued to ANPP as described in the referenced letter. Our response is provided as Attachment A.

Very truly yours,

E. E. Van Brunt, Jr.
Executive Vice President
Project Director

EEVB/PJC/nj

Attachment

cc: A. C. Gehr
E. A. Licitra
R. P. Zimmerman

1/1 IE-01

Attachment A

Notice of Violation

As a result of the inspection conducted on March 3 - April 27, 1985, and in accordance with NRC Enforcement Policy, 10CFR Part 2, Appendix C, the following violation was identified:

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" states, in part, that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

Bechtel Work Plan Procedure/Quality Control Instruction 251.0 "Raceway Installation" Appendix I, Revision 18, Section B-5, Item 3 requires verification that, "...the proper type and size of pull boxes, man holes, hand holes, terminal boxes, and/or receptacles have been installed per applicable drawings." Section B-5, Item 16 further requires verification that, "...cable in electrical man holes is properly supported and racked."

Contrary to the above, man holes 1EZV06AKEM02, 1EZV06AKEM03, 1EZV06AKEM04 1EZV06BKEM01, 1EZV06BKME02, and 1EZV06BKEM04 (including their contents) were not verified in accordance with the above procedures and were not on the licensee's schedule for future inspection by their Quality Control organization.

Similarly, pull boxes installed with conduits 2EZCAEBRC01 and 2EZJ3ACRX07 were not verified as required.

This is a Severity Level IV Violation (Supplement II).

Response to Notice of Violation

ANPP reviewed the two instances of failure to perform QC inspections of raceways and determined that the root cause and required corrective action are quite different for each case. Therefore, the two instances are being handled separately.

Verification of Manholes

I. Corrective Steps Taken and Results Achieved

The investigation into the identified condition determined that QC verification of the manholes is required by WPP/QCI 251.0. At the time of area acceptance by ANPP, the QC inspections had not been performed and were, therefore, included as open items in the acceptance package. ANPP's Engineering Support Group (ESG) reviewed the packages and recognized that the inspections had not been completed. However, the reviewing engineer mistakenly classified the inspections as Category III, "No further action required."

To determine the extent of the misclassification problem, the ESG conducted an 100% review of the Area Subsystem Acceptance Packages for Unit 1. In addition, a 10% sample of "Q" and "Important to Safety" Non-Area Sybsystem Acceptance Packages was reviewed. No deficiencies were identified in the Non-Area Subsystem packages. The following table summarizes the results of the ESG's review. The table delineates the area subsystem packages in which deficiencies were found, the number and type of deficiencies, and the documents initiated to track the items to resolution.

Area Subsystem I.D.	No. of Q CAT III DRN/PL Items	No. of R&S CAT III DRN/PL Items	Total No. of Deficiencies	Work Request No. Used to Resolve and Track Deficiencies
1ZA03	0	7	7	WR #73176
1ZC08	26	0	26	WR #73172
1ZY01	24	214	238	WR #73107
1ZY08	1	0	1	WR #73173
	(51 total Q-Class Deficiencies)			

The specific items (1ZY01-Manholes) identified in the Notice of Violation were inspected and found acceptable on May 15, 1985. There were an additional 18 items which involved missing QC inspections. All the items were inspected and found acceptable.

An evaluation of the deficiencies identified by the ESG review indicates the root cause was the failure of one engineer to properly interpret the acceptance program open item priority requirements. All identified deficiencies were contained within packages reviewed by this individual. As a result, all acceptance packages evaluated by that engineer were included in the ESG's review.

II. Corrective Steps Taken To Prevent Recurrence

In order to consolidate responsibilities, the acceptance package review has been reassigned to the Outage Management Group (OMG). The controlling procedure 73AC-0ZZ05, "PVNGS Operations Open Item Completion," has been revised to clearly define responsibilities and to specifically address the processing of open items such as those described in the Notice of Violation.

III. Date when Full Compliance Will Be Achieved

All corrective actions for "Q" items were completed by 5/15/85. The "R" and "S" items on work request no. 73107 are not yet complete. Completion is scheduled for 6/24/85.

Verification of Pull Boxes

I. Corrective Steps Taken and Results Achieved

At the time of the NRC inspection, Corrective Action Report CA-85-0072 was initiated to identify the apparent problem regarding Quality Control (QC) acceptance of pull boxes. Further, nonconformance reports (NCRs) EC-5982 for 2EZVCAEBRC01 and EC-5983 for EZJ3ACRX07 were generated stating that pull boxes installed in the listed raceways were not acceptance inspected when the raceway was accepted by QC.

The NCRs were dispositioned identifying that earlier rework had occurred for both conduit runs as a result of unrelated nonconformances discovered and reported on NCRs EC-4288 (EC-5982) and EA-3837 (EC-5983). As a result of repulls into both conduits, pull boxes were apparently added without documenting per the requirements of WPP/QCI No. 251.0, "Raceway Installation." Specifically, the procedure, per paragraph 9.10, requires the Field Engineer to issue a new Raceway Inspection Record with appropriate rework instructions. In one case the rework card did not indicate that a new pull box was installed. For the second case, the Engineer apparently did not

generate a new Raceway Inspection Record. Consequently, QC did not inspect any work associated with either of the two (2) pull boxes. The root cause has been determined to be a failure of the Field Engineer to follow procedures.

The NCRs (EC-5982 and EC-5983) have been dispositioned to require the field to inspect the pull boxes and associated supports to meet Specification 13-EM-304 requirements and document per WPP/QCI No. 251.0.

To address the recommended corrective actions of CAR CA-85-0072, Special Construction Inspection Planning (SCIP) 654.0 was initiated to establish a verification of pull box installation with respect to QC acceptance on the Raceway Inspection Record.

QC walked down each area containing Q-Class conduit installations to determine if pull boxes were installed. For conduits with pull boxes installed, QC reviewed the associated Raceway Inspection Records. The review had the following results:

	Unit 2	Unit 3
Raceways with pull boxes installed	74	86
Raceways not yet submitted to QC	15	74
	59	12
Raceways with Task #3* stamped	26	6
Raceways without Task #3* stamped	33	6

*Task 3 on the Raceway Inspection Record, titled "Pull Boxes - Proper Size and Type Installed."

The conclusion reached from the above walkdown indicates a second root cause in that QC Engineers were unclear as to their responsibility for stamping Task No. 3 on the Raceway Inspection Record.

Pull boxes are installed in conduit runs to be utilized as pull-out points for cable, if necessary, to either stay within pulling tension maximums or limit the degrees (270° maximum) of bend the cable is subjected to in a single pull. As such, they are effectively construction aids that permit the pulling crew an ability to maintain specification requirements during the cable pull operation. Bechtel Drawing 13-E-ZAC-050, titled "Electrical Notes and Details," states in part under 1.4: "Pull Boxes necessary in a long, single run of conduit for pulling purposes... are the responsibility of the Electrical Field Engineer to size and locate." The Electrical Field Engineer sizes and

locates pull boxes in accordance with Engineering Drawing 13-E-ZAC-076 for specified cables. For cables not specified on the above drawing, the Field Engineer sizes and locates the pull boxes such that the cable manufacturer's minimum bend radius is not violated.

Quality Control's responsibility for pull boxes is to assure that the integrity of the enclosed raceway is maintained. The inspection activities include such attributes as separation and proper support and is done in conjunction with the overall raceway inspection performed per WPP/QCI No. 251.0. QC does have a responsibility for assuring that minimum cable bend radius is not violated. However, the verification of bend radius requirements is performed under WPP/QCI No. 254.0, "Cable Installation," at the time of cable pulling operations and is documented in accordance with WPP/QCI No. 254.0.

At issue with QC Engineers related to Task No. 3 on the Raceway Inspection Record was a question of whether or not a QC inspection and stamp was required. The problem developed because the instructions for Task No. 3 did not specifically identify that this step was only the Field Engineer's responsibility as defined by Drawing 13-E-ZAC-050. Consequently, some QC Engineers performed an inspection and stamped the item. The inspection for size and type would be in excess of requirements, however, QC does inspect for the critical attributes discussed in the preceding paragraph.

During the inspection per SCIP 654.0, deficient expansion anchors were found supporting the pull box for conduit 2EZCAEBRC01. The pull box, which was identified above as not having been previously inspected by QC, had two (2) of its six 3/8" anchors with indistinguishable length identification designators. To eliminate any concern for support requirements for the remaining pull boxes, the SCIP was expanded to require an inspection of pull box support installation.

As a result of the above inspection per SCIP 654.0, NCR EA-6125 was issued reporting two (2) additional boxes (totaling three), of the 160 raceways containing boxes, with support deficiencies.

To assure conformance of Unit 1, a sample of pull boxes will be reinspected. Based upon the results of the reinspection, an evaluation will be conducted to determine further corrective actions.

II. Corrective Steps Taken to Prevent Recurrence

To provide clarification to the raceway installation procedure, Procedure Change Notice (PCN) No. 131 to WPP/QCI No. 251.0 was issued to clearly define Task No. 3 as a Field Engineering responsibility. Quality Control action will be not applicable (N/A).

As an additional step, all electrical discipline CIPs will be reviewed for any clarifications or enhancements required to assure clear and concise documentation requirements.

Electrical QCEs will receive training on all electrical CIPs. Emphasis will be placed on attention to details and that QCEs are not to make acceptance inspections when insufficient procedural direction exists to assure achievement of minimum design requirements.

To address the problem of submitting properly notated Raceway Inspection Records, Electrical Field Engineers will receive training on the requirements of WPP/QCI No. 251.0.

III. Date When Full Compliance Will Be Achieved

PCN No. 131 to WPP/QCI No. 251.0 was issued June 7, 1985.

The review of Electrical CIPs and related training will be completed by July 22, 1985.

NCRs EC-5982, EC-5983, and EA-6125 will be dispositioned and reworked as necessary by June 29, 1985.

Electrical Field Engineering training will be completed by July 22, 1985.

Unit 1 reinspections will be completed by July 15, 1985.