Arizona Nuclear Power Project
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April 15, 1985
ANPP-32396-EEVBJr/WEI/WFQ

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

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

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2 and 3
Docket No. 50-528 (License No. NPF-34)/529/530
Investigation of Allegation
NRC Concern RV-84-A-087; No. 154
File: 85-019-026; D.4.33.2

Reference: (A) NRC Letter from D. F. Kirsch to E. E. Van Brunt, Jr., dated January 31, 1985

(B) ANPP Letter ANPP-32088-EEVBJr/WEI/WFQ, dated March 7, 1985

Dear Sir:

As per Reference (A), ANPP was requested to investigate the concerns expressed by a confidential alleger. Reference (B) provided the ANPP response to the referenced concerns with the exception that one concern required further investigation. Attachment A provides the response to that concern.

If there are questions regarding these investigations or the results, please contact us.

Very truly yours,

EE Van Brunt/ABK

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

EEVBJr/WEI/skc

Attachment

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ATTACHMENT A

Downgrading of Test Equipment Specifications

(RV-84-A-87; No. 154; Concern 1)

Concern:

Test Equipment Specifications Were Arbitrarily Modified (e.g. Rod Oven Thermometers, Micrometers, Holiday Detectors and Ashcroft Pressure Gages):

Investigation Results:

Work Plan Procedure, WPP 7.0, entitled "Calibration and Control of Construction Measuring and Test Equipment", allows the Instrument Calibration Laboratory Engineer (ICLE) to establish accuracies for Measuring and Testing Equipment based on Project requirements. This accuracy may be different than that specified by the manufacturer, depending on the use of the Measuring and Testing Equipment. A review was conducted of the equipment specified in this concern to identify if the accuracy specified by the ICLE was different than that specified by the instrument manufacturer. The results of that review indicate the following:

a. Rod Oven Thermometers:

The manufacturer's specified accuracy is $\pm$ 10° F. The accuracy specified by the ICLE for use at PVNGS was $\pm$ 20° F.

Rod oven thermometers are used to ensure that weld rod ovens are maintained at a temperature which will prevent the potential moisture gain in E7018 electrodes resulting from high humidity environments. This requirement exists to prevent under bead cracking and to minimize porosity when the weld rod is used. Bechtel Specification WFMC-1 for weld electrodes establishes a rod oven holding temperature of 200° F to 350° F.

With the low humidity conditions present at the Palo Verde jobsite, maintenance of weld rod at less than the prescribed holding temperature can be demonstrated by Bechtel M&QS test data to not have an adverse affect on the quality of the completed weld.

As a follow-up to this investigation, a review of weld rod holding oven temperature monitoring logs has revealed that recorded temperatures in a few cases (approximately seven (7) instances out of approximately ten thousand (10,000) records) were less than the minimum 200 °F required. Bechtel Field Engineering will review this condition and will ensure the

noted discrepancies are/or were previously reported on Nonconformance Reports. Instances in which the recorded temperatures are less than 220° F but greater than 200° F could allow the actual temperature to be below 200° F in the worst case, even with the thermometer within the calibration range. Engineering has evaluated the condition as having no safety significance, therefore, no further review of this issue will be taken.

b. Micrometers:

In the previous review, as described in Reference (B), one case was noted in which an error, that exceeded the manufacturer's tolerance, was accepted. This deficiency was documented on a Defective Instrument Report, DIR-92. This specific case has been determined not to affect any previous installation.

To determine the extent and significance of this problem, Bechtel Engineering will evaluate a sample of M&TE calibration records which accepted an out-of-tolerance condition. The sample size will be determined by Project Engineering and the results of the review will be evaluated for safety significance.

The above review and evaluation will be completed by May 17, 1985.

c. Holiday Detectors:

The resolution of this concern was fully addressed in Reference (B).

d. Ashcroft Pressure Gages:

Ashcroft Pressure Gage Model 1320A has a manufacturer's specified accuracy of $\pm$ ½%. The required accuracy at PVNGS has been specified by the ICLE as $\pm$ 1%.

Hydrostatic tests are performed in compliance with Project specifications and based on Code requirements. The minimum test pressure is determined by the design pressure, multiplied by a factor of 1.25 and/or 1.5, depending on the applicable Code. Project Engineering allows the test pressure to exceed the minimum required by a maximum of + 6%.

A review of documented hydrostatic test records and discussions with responsible individuals revealed that the minimum/maximum test ranges are determined by the design pressure, multiplied by the required factor. Maximum pressure is established by the test pressure, plus 6%, to compensate for possible gage error. The recorded test pressures in the documentation reviewed were in the mid-range between the minimum/maximum allowed. There was no case where the ± 1% accuracy could have had an adverse effect on the test results.

Records included documentation of pre-test and post-test calibrations, percent accuracy of test gages and calibration equipment used. Test gages were identified to have ± 1% accuracy, calibration gages were recorded to be .1%/.25% accurate. The test records reviewed meet these requirements.

There is no evidence of an arbitrary modification of calibration accuracies that do not meet Project requirements.

Based on the results of the review of Measuring and Testing Equipment conducted to date, it has been determined that in a few instances the Bechtel Calibration Lab has calibrated or accepted Measuring and Testing Equipment to an accuracy range greater than that recommended by the manufacturer. The evaluation of affect on Project installations has not been documented. The use or acceptance of M&TE calibration accuracies greater than those recommended by the manufacturer may have an impact on the acceptance criteria established in the Project design documents.

The root cause of this situation has been determined to be:

A. Bechtel's Construction Work Plan Procedure (WPP 7.0) for Measuring and Testing Equipment (M&TE) calibration allowed the Bechtel Instrument Calibration Laboratory Engineer (ICLE) to utilize a calibration accuracy range different than that recommended by the manufacturer without documenting the effects on Project installation or review by Project Engineer.

B. Bechtel's Calibration Lab personnel made errors in isolated cases by accepting out-of-tolerance M&TE returned from the field without proper evaluation.

To resolve these deficiencies, the following corrective actions will be taken:

A. Bechtel Construction Procedure, WPP 7.0, will be revised by April 16, 1985 to require Bechtel Engineering approval for any change to M&TE calibration accuracy ranges. The basis of the evaluation will be documented.

B. Bechtel Engineering will review and evaluate all instances in which M&TE calibration accuracy ranges were previously increased by the ICLE. This review will be completed by May 3, 1985.

C. Bechtel Engineering will evaluate the effect on plant installation of a sample of M&TE calibration records which accepted an out-of-tolerance condition, without a proper evaluation. This review will be completed by May 17, 1985.