

**Washington Public Power Supply System**

P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509)372-5000

Docket No. 50-397

July 1, 1982  
G02-82-574

Mr. R. H. Engelken  
U.S. Nuclear Regulatory Commission  
Region V  
1450 Maria Lane, Suite 210  
Walnut Creek, California 94596

Subject: NUCLEAR PROJECT NO. 2  
10CFR50.55(e) REPORTABLE CONDITIONS #10, #58, #62, and  
#83 - DEFICIENCIES IN CONCRETE EXPANSION ANCHOR PROGRAM;  
AND 10CFR50.55(e) REPORTABLE CONDITION #73 - DEFICIENCIES  
IN INSTALLED GROUT

References: a) Letter No. GI2-82-47, dated April 3, 1982, R.G. Engelken  
to R.G. Matlock, same subject.  
b) Letter No. G02-82-430, dated May 10, 1982, R.G. Matlock  
to R.H. Engelken, same subject

Reference b) informed you that WNP-2 had reopened the above subject  
10CFR50.55(e)'s as requested in reference a). Attachments 1, 2, 3,  
4, and 5 provide interim reports on the anchor bolt and grout problems  
on the project.

We will continue to provide your office with quarterly updates on this  
subject until all deficiencies are resolved. The next report will be  
submitted on or before September 8, 1982.

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If there are any questions concerning this matter, please contact Roger Johnson at (509) 377-2501, extension 2712.

  
R. G. Matlock  
Program Director, WNP-2

LCF/kd

Attachments:    1. Interim Report - 10CFR50.55(e) #10  
                  2. Interim Report - 10CFR50.55(e) #58  
                  3. Interim Report - 10CFR50.55(e) #62  
                  4. Interim Report - 10CFR50.55(e) #33  
                  5. Interim Report - 10CFR50.55(e) #73

cc:    W.S. Chin, BPA - Site  
         R.A. Feil, NRC Resident Inspector - Site  
         A. Forrest, Burns and Roe - HAP0  
         N.D. Lewis, NRC  
         J. Plunkett, NUS Corp.  
         R.E. Snaith, Burns and Roe - NY  
         V. Stello, NRC  
         Site Files - 917B

## ATTACHMENT 1

### INTERIM REPORT SUPPLY SYSTEM NUCLEAR PROJECT NO. 2 DOCKET NO. 50-397 - LICENSE NO. CPPR-93 10CFR50.55(e) CONDITION #10 UNACCEPTABLE INSTALLATION OF CONCRETE ANCHORS

#### Potential Problem

Concrete anchors used for installation of safety related hangers were not fully expanded. Approximately 50% of a sample of 75 installed hangers were considered to have anchors unacceptably expanded to accomodate design loadings.

#### Safety Implications

The improper installation of the concrete anchors, if left uncorrected, could cause failure of the anchors when subjected to design loads. The failure of the anchor or anchors could lead, in turn, to possible failure of the support and the subsequent loss of the safety related function of the component/system being supported.

#### Approach to Resolution of the Problem

The WNP-2 Project is continuing with the corrective actions reported in previous correspondence on this subject. Currently, the project is performing an evaluation of all 10CFR50.55(e) reports, NRC Inspection reports, applicable PED's and site correspondence pertinent to anchor bolts, to ensure all aspects of the anchor bolt program are addressed with a traceable approach.

#### Current Status

The evaluation is in process, but due to the complexity of the interfacing issues and there being 4 10CFR50.55(e)'s, several NRC Inspection reports, and 6 site contractors, no conclusion has been reported at this time. Therefore, we will continue to provide your office with quarterly reports on this subject. The next report will be forwarded by September 28, 1982.

## ATTACHMENT 2

INTERIM REPORT  
SUPPLY SYSTEM NUCLEAR PROJECT NO. 2  
DOCKET NO. 50-397 - LICENSE NO. CPPR-93  
10CFR50.55(e) CONDITION #58  
IMPROPER INSTALLATION OF CONCRETE ANCHORS  
FOR QUALITY CLASS I RACEWAY SUPPORT ANCHORS

### Potential Problem

Improper installation of concrete anchors (under expansion) for Quality Class I Raceway Support Anchors by the electrical contractor (Contract 218, Fischbach/Lord). The improper installation of the concrete anchor bolts appears to constitute a significant breakdown in the Contract 218 Quality Assurance Program.

### Safety Implication

The improper installation, if left uncorrected, could cause these concrete anchors to fail. Subsequently, this could result in failure of safety related equipment during the operational life time of the Nuclear Power Plant.

### Approach to Resolution of the Problem

The WNP-2 project is continuing with the corrective actions reported in previous correspondence on this subject. Currently, the project is performing an evaluation of all 10CFR50.55(e) reports, NRC Inspection reports, applicable PED's and site correspondence pertinent to anchor bolts, to ensure all aspects of the Anchor Bolt Program are being addressed with a traceable approach.

### Current Status

The evaluation is in process, but due to the complexity of the interfacing issues and there being 4 10CFR50.55(e)'s, several NRC Inspection reports, and 6 site contractors, no conclusion has been reported at this time. Therefore, we will continue to provide your office with quarterly reports on this subject. The next report will be forwarded by September 28, 1982.

### Attachment 3

INTERIM REPORT  
SUPPLY SYSTEM NUCLEAR PROJECT NO. 2  
DOCKET NO. 50-397 - LICENSE NO. CPPR-93  
10CFR50.55(e) CONDITION NO. 62  
IMPROPER INSTALLATION OF ANCHOR BOLTS BY THE WALDINGER CORPORATION

#### Potential Problem

Mechanical connections of supports were not accomplished in accordance with approved drawings. Anchor bolts were cut short and then tack welded to the back side of the foot plates. The anchor bolts were not threaded into the concrete anchors and, in at least one case, no concrete anchor was installed. Visual inspection of the installation would appear satisfactory, when in actuality, the installation would be completely unsatisfactory.

#### Safety Implications

The improper installation of the support anchor bolts could cause the HVAC duct work to fail. Failure of the HVAC duct work would seriously affect the operating personnel in the control room and the duct work could also fall upon and damage safety related equipment. Such a failure would prevent the safe operation and safe shutdown of the nuclear power plant.

#### Approach to Resolution of the Problem

The WNP-2 Project is continuing with the corrective actions reported in previous correspondence on this subject. Currently, the project is performing an evaluation of all 10CFR50.55(e) reports, NRC Inspection reports, applicable PED's and site correspondence pertinent to anchor bolts, to ensure all aspects are addressed with a traceable approach.

#### Current Status

The evaluation is in process, but due to the complexity of the interfacing issues and there being 4 10CFR50.55(e)'s, several NRC Inspection reports, and 6 site contractors, no conclusion has been reported at this time. Therefore, we will continue to provide your office with quarterly reports on this subject. The next report will be forwarded by September 28, 1982.

#### ATTACHMENT 4

INTERIM REPORT  
SUPPLY SYSTEM NUCLEAR PROJECT NO. 2  
DOCKET NO. 50-397 - LICENSE NO. CPPR-93  
10CFR50.55(e) CONDITION NO. 83  
IMPROPER INSTALLATION OF CONCRETE ANCHORS BY PETER KIEWIT SONS' CO.

#### Potential Problem

The improper installation of concrete anchors (under expansion) by Peter Kiewit Sons' Co. constitutes a significant breakdown in the Contract 210 Quality Assurance Program.

#### Safety Implication

The improper installation, if left uncorrected, could cause these concrete anchors to fail. Subsequently, this could result in failure of safety related equipment during the operational life time of the Nuclear Power Plant.

#### Approach to Resolution of the Problem

The WNP-2 Project is continuing with the corrective actions reported in previous correspondence on this subject. Currently, the project is performing an evaluation of all 10CFR50.55(e) reports, NRC Inspection reports, applicable PED's and site correspondence pertinent to anchor bolts, to ensure all aspects are addressed with a traceable approach.

#### Current Status

The evaluation is in process, but due to the complexity of the interfacing issues and there being 4 10CFR50.55(e)'s, several NRC Inspection reports, and 6 site contractors, no conclusion has been reported at this time. Therefore, we will continue to provide your office with quarterly reports on this subject. The next report will be forwarded by September 28, 1982.

## ATTACHMENT 5

### INTERIM REPORT SUPPLY SYSTEM NUCLEAR PROJECT NO. 2 DOCKET NO. 50-397 - LICENSE NO. CPPR-93 10CFR50.55(e) CONDITION NO. 73 CONCRETE AND GROUT WORK

#### Potential Problem

It was determined that the Contract 215 contractor performed Quality Class I grouting on safety-related hanger baseplates, using sand/cement grout without proper material traceability and quality control measures, including material testing and documentation.

The initial investigation of the Contract 215 problem produced proof through field testing, that some of the sand/cement grout was improperly mixed, poorly installed, and of insufficient compressive strength. These deficiencies involve inadequate process controls which may have affected other types of grout and other contractors who placed grout. Therefore, the scope of the original report to the Commission in letter G02-80-302, dated December 15, 1980, has been enlarged.

#### Safety Implication

The improper installation of grout, if left uncorrected, could cause a failure, jeopardizing the function of safety related equipment.

#### Approach to Resolution of the Problem

The Supply System is directing a program to identify all types of grout utilized on Nuclear Project No. 2 under baseplates, equipment, cabinets, and instrument racks which are Seismic or Quality Class I. This program also identifies which contractor placed the grout. Additionally, grout placements used to structurally repair plant walls, columns, and floors will be identified. Following identification of all combinations of grout type, use, and grouting contractor, each of these combinations will be examined for susceptibility to the problem of inadequate process control. Where such a possibility exists, assurance that the grout will perform its function will be obtained through the microcoring technique, review of work procedures, review of grout technical requirements, research of test and placement records, or a combination of these, as necessary. These results will be reported to the Commission when complete.

#### Current Status

The Supply System is directing a review of correspondence and records to identify all grouting contractors who have performed Seismic or Quality Class I work. To date, four such contractors have been identified. In parallel, grout records are being reviewed to identify all of the various uses of grout by each contractor. Walkdown of the plant is being used as a cross-check on the grout record review.



Current Status (Continued)

Quality program documents, including Nonconformance Reports, Corrective Action Requests, Surveillance and Audit Reports, and 10CFR50.55(e) Reports are being reviewed to identify any past grout problems which may be relevant to the current issue. A review of current grouting practice is being performed to assure that no potential for a process control problem exists at this time.

These efforts will culminate in a final phase of microcoring to obtain any grout samples from the plant needed to complete the grout study and conclude this 10CFR50.55(e) issue.

Action to Prevent Recurrence

The Supply System has removed all grout work from the scope of Contract 215 and concentrated it within Contract 210A. Current practice is based upon revised work procedures and a revised quality program. Additional measures may be taken as a result of the final report on this issue.