

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

REGION III

Reports No. 50-440/80-20; 50-441/80-18

Docket Nos. 50-440; 50-441

Licenses No. CPPR-148; CPPR-149

Licensee: The Cleveland Electric Illuminating Company  
P.O. Box 5000  
Cleveland, OH 44101

Facility Name: Perry Nuclear Power Plant, Units 1 and 2

Inspection At: Perry Site, Perry, OH

Inspection Conducted: September 17-19, 1980

Inspector: R. B. Landsman

*RB Landsman*

10-21-80

Approved By: *D. W. Hayes*  
D. W. Hayes, Chief  
Engineering Support Section 1

10/21/80

Inspection Summary

Inspection on September 17-19, 1980 (Reports No. 50-440/80-20; 50-441/80-18)

Areas Inspected: Followup of previously identified items; observation, procedure requirements and quality records for safety-related concrete. The inspection involved 25 inspector-hours on-site by one NRC inspector. Results: In the three areas inspected, three items of noncompliance were identified (Infractions: Units 1 and 2 - inadequate inspection program; failure to follow procedures for concrete placement and failure to follow procedures for certifying QA/QC personnel).

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## DETAILS

### Persons Contacted

#### Principal Licensee Employees

- \*M. Edelman, Quality Assurance Manager
- \*B. Kacer, General Engineering Supervisor
- \*R. Vondrasek, Training/Administration General Supervisor
- \*R. Rinderman, Operational QA Supervisor
- \*M. Combs, Training/Administration Coordinator
- \*G. Leidich, CQE Supervisor
- \*J. Connelly, Lead Civil Q.E.
- \*D. Green, Senior Project - Nuclear Design
- \*T. Arney, Quality Assurance Program Manager

#### Kaiser Engineering Inc.

- \*P. Gibson, Construction Quality Control Supervisor

#### NRC Persons on Site Part Time

- \*G. Fiorelli, Chief, Reactor Construction and Engineering Support Branch
- \*C. Williams, Chief, Projects Section 2
- \*J. Hughes, Resident Inspector, Perry

\*Denotes those attending the exit meeting on September 19, 1980.

#### Management Meeting

Mr. Fiorelli and Mr. Williams met with licensee representatives and conducted a management meeting relative to the control of construction activities.

#### Licensee Action on Previous Inspection Findings

(Open) Noncompliance (440/80-06-02; 441/80-06-02) Failure to provide indoctrination and training of craft personnel by NECC. The inspector reviewed the documented evidence referred to in the licensee's response to the infraction. Having vibrator operators sign a "seven check list sheet" entitled, "Proper techniques for vibrating concrete using an internal vibrator" is not the intent of establishing a meaningful indoctrination and training program. The inspector also reviewed the records of the formal vibration training classes held by NECC: there are none in 1980; one was held in 1979 to three foremen; three were conducted in 1978 (after the shutdown) to one foreman and 30 laborers (some attended more than one class); and two were held in 1977 to 19 laborers (some of which were the same). Since February 1979, no training classes have been held. The inspector requested how many new people have been hired since then and how many still remain on site. This item remains open pending the contractor's response.

(Closed) Noncompliance (440/80-07-01; 441/80-07-01) Failure to obtain soil samples from stockpile. The inspector reviewed Field Question No. 8656 which indicated that correlation gradation tests have been performed between stockpile samples and density test location samples. They indicated that a minor change in gradation was occurring, but it is so slight that it would not effect density tests. The inspector then reviewed QCP-10, Revision 9, dated June 16, 1980, Section VI instruction, paragraph 1.1, which has been changed to allow sampling from the compacted fill in light of the correlation tests. This item is closed.

(Closed) Noncompliance (440/80-07-02; 441/80-07-02) Failure to provide for moisture control of Class A backfill as specified in the PSAR. The inspector reviewed PSAR Deviation No. 129 which indicated that the PSAR will be revised to provide moisture control for Class B fill only. This item is closed.

(Open) Noncompliance (440/80-07-03; 441/80-07-03) Failure to provide appropriate quantitative acceptance criteria when testing every third lift of backfill. The inspector agrees with the licensee that it is not necessary to perform a density test on every lift of fill for small areas. However, the inspector discussed the merits of obtaining an adequate inspection by visually watching the placement and compaction. The intent of this is to watch and document the compaction. The licensee is looking into changing the procedures to have QC watch and document the compaction on the non-tested lifts. This item remains open pending a review of the procedure change.

(Closed) Noncompliance (440/80-07-04; 441/80-07-04) Failure to control changes to specifications. The inspector reviewed ECN's 4759-1-40 and 4763-93-57 which addressed the four previously cited memos. A June 6, 1980 letter was also reviewed indicating that all specification changes will be done by the use of FVA's or ECN's and not by memos. This item is closed.

(Open) Unresolved (440/80-07-05; 541/80-07-05) Records on compaction equipment qualification tests. The records still could not be located. This item remains open pending review of the records.

(Open) Unresolved (440/80-07-07; 441/80-07-07) Compaction records of upper-most lift under building. Records indicate that the only buildings with questionable material are the Diesel Generator Building and the Off-Gas Filter. The licensee is continuing to run density tests on the upper four to twelve inches of material to show that the material meets the specification. This item remains open pending completion and review of the test results.

(Closed) Noncompliance (440/80-07-08; 441/80-07-08) Failure to document actual lift thicknesses and number of passes of compaction equipment. The inspector reviewed revised form QC-47 which now requires the recording of the actual numbers as well as the requirements. This item is closed.

### Concrete Program Areas Inspected

The inspector observed Drywell Wall, Ring No. 2, Containment No. 2, Placement No. RB2-W02-630. The transporting consisted of two pump lines, each covering 180° of the ring. Each circular segment was approximately 110 feet long with discharge gates every ten feet.

The inspector observed that the point of concrete sampling was not at the end of the pump discharge line, it was at the start of the semicircle. This is in violation of U.S.T. Company Procedure QCP-3 and Concrete Specification SP-14, which both require when concrete is pumped that it be sampled at the "end" of the pump discharge line. This failure to follow site procedures is in noncompliance with Criterion V of 10 CFR 50, Appendix B, as discussed in Appendix A. (440/80-20-01; 441/80-18-01).

The pour proceeded from the far end of the line toward the start of the semicircle and took approximately one hour to complete, allowing the contractor to stay within the maximum pour rate of 18 inches per hour. Because of the use of gates, and not breaking sections of discharge line off the end as is common practice, concrete sat in the line for at least one hour. There is no mechanism to waste this concrete if the temperature, time limitation, slump, etc. are out of specifications. Since this was considered a massive section, i.e. greater than 3'-9" thick, specifications require that the temperature must not exceed 70°F. The batch plant tickets indicated that concrete was coming in at a temperature in the high 60's. But, because of the sampling point, at the beginning of the line, there was no way to tell what the temperature of the concrete in the line had risen to. This is another example of the licensee's failure to follow site procedures and is in noncompliance with Criterion V of 10 CFR 50, Appendix B, as discussed in Appendix A. (440/80-20-02; 441/80-18-02).

During the review of the batch plant tickets, the inspector discovered that there was a breakdown in the pumping operation and two trucks sat waiting to be discharged for approximately one hour (determined from the driver noting unofficial times on his copy of the batch plant ticket). Concrete was sitting in the pump line for one hour after it has been waiting one hour for discharge, for a total of two hours, which exceeds the specification requirements of 1 1/2 hours. This is another example of the licensee's failure to follow site procedures and is in noncompliance with Criterion V of 10 CFR 50, Appendix B, as discussed in Appendix A. (440/80-20-03; 441/80-18-03).

Furthermore, the licensee did not provide for verification of truck agitating revolutions or discharge times. ASTM C-94, Section 10.7, states, "Discharge of the concrete shall be completed within 1 1/2 hours, or before the drum has revolved 300 revolutions, whichever comes first . . ." This constitutes an inadequate inspection program which is contrary to Criterion X of 10 CFR 50, Appendix B, as discussed in Appendix A. (440/80-20-04; 441/80-18-04).



As part of observing the pour, the inspector reviewed the training and qualification procedures for the QC/QA NECC inspectors. NECC Procedure QAP No. 1.1, Section 6.2 indicated that they are following Regulatory Guide 1.58 and ANSI N4.2.6 to which they are committed. Discussions with the cognizant NECC individual indicated that Paragraph 6.2 was apparently being used as a mechanism to certify personnel with little or no prior experience, relying on site conducted indoctrination and training as a basis for certification.

The records of the four QC/QA NECC inspectors who were assigned to the placement were checked against the requirements. Two of the four files examined revealed the following:

1. The documented experience and education factors did not meet the levels specified in ANSI N45.2.6-1973 with regard to type and duration.
2. Proficiency testing appeared to be the main basis for certifying the two individuals.

The excessive substitution of proficiency testing for prior experience does not meet the intent of Regulatory Guide 1.58 and ANSI N45.2.6-1973 and as such is in noncompliance with 10 CFR 50, Appendix B, Criterion V, as discussed in Appendix A (440/80-20-05; 441/80-18-05).

#### Exit Interview

The inspector met with site staff representatives (denoted under Persons Contacted) at the conclusion of the inspection on September 19, 1980. The inspector summarized the purpose and findings of the inspection. The licensee acknowledged the findings reported herein.